Policy Design, Innovation and Diffusion: Evidence from Cantonal Public Health Policies in Switzerland

Thesis
presented to the Faculty of Arts and Social Sciences
of the University of Zurich
for the degree of Doctor of Philosophy

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Accepted in the fall semester 2015 on the recommendation of
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Zurich, 2018

Abstract

What difference do the characteristics of innovative policies make? Do certain characteristics render such policies more adoptable? And do they condition the weight of other factors that explain policy innovation? Thus far, these questions have received little attention in research. In addressing them, this study focusses on characteristics that are inherent to the design of the particular policy innovation, including its designated beneficiaries, degree of intervention, complexity and implementation costs.

Based on event history analyses of Swiss cantonal public health policies, it tests various hypotheses on the direct and indirect effects of policy design characteristics on the likelihood that states innovate. Its findings confirm that policy design characteristics matter for innovation decisions. Specifically, it shows that governments go by peer states' previous adoptions of the policy at stake when deciding on complex and expensive innovative policies, but do not rely on such cues for decisions on simple and low-cost innovations.

Because of certain empirical constraints that this study faces further research is called for to convey a more comprehensive picture of the impact of policy design characteristics on innovation.

Zusammenfassung

Welche Bedeutung haben die Merkmale innovativer Policies? Führen bestimmte Merkmale dazu, dass solche Policies eher angenommen werden? Beeinflussen sie ferner die Relevanz anderer Faktoren, die Politikinnovation erklären? Diese Fragen sind bislang wenig erforscht worden. Um sie zu beantworten, richtet diese Studie ihr Augenmerk auf Merkmale, die sich aus dem Design der jeweiligen Innovation ergeben: die Begünstigten, den Eingriffsgrad, die Komplexität und die Vollzugskosten.

Auf der Grundlage von Ereignisdatenanalysen zu Public-Health Policies der Schweizer Kantone werden verschiedene Hypothesen zu den direkten und indirekten Auswirkungen von Merkmalen des Policy-Designs auf die Innovationswahrscheinlichkeit getestet. Die Ergebnisse bestätigen, dass die Merkmale des Policy-Designs einen Einfluss auf Innovationsentscheidungen haben. Konkret zeigt sich, dass sich Regierungen bei Entscheidungen über komplexe und teure innovative Policies – anders als bei Entscheidungen über Innovationen, die ein einfaches Design mit geringen Kosten verbinden – von früheren Annahmen der betreffenden Policy durch andere Staaten aus ihrem Vergleichsumfeld leiten lassen.

Aufgrund bestimmter empirischer Grenzen, an die diese Studie stösst, sind weitere Untersuchungen notwendig, um ein vollständigeres Bild dazu zu vermitteln, wie sich Merkmale des Policy-Designs auf Innovation auswirken.

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Abbreviations

ADHP	Association of Cantonal Delegates for Health Promotion
AG	Aargau
AI	Appenzell Innerrhoden
AR	Appenzell Ausserrhoden
Art.	Article
BC	Business Census
BE	Bern
BL	Basel-Landschaft
BS	Basel-Stadt
CH CONST.	Federal Constitution of the Swiss Confederation
CHF	Swiss franc
CI	confidence interval
CLASS	*Conférence latine des affaires sanitaires et sociales*
CMPH	Swiss Conference of the Cantonal Ministers of Public Health
CPPS	*Commission Prévention et Promotion de la Santé*
CS	Council of States
EHA	event history analysis
EU	European Union
FC	Federal Council
FDC	funded defined-contribution
FOPH	Federal Office of Public Health
FR	Fribourg
FSO	Swiss Federal Statistical Office
FV	*Fourchette verte*
FV-CH	*Fédération Fourchette verte Suisse*
GDP	gross domestic product
GE	Geneva
GL	Glarus
GR	Graubünden
HIV/AIDS	Human immunodeficiency virus infection/acquired immune deficiency syndrome
HMO	health maintenance organisation
JU	Jura
LU	Lucerne
NAIC	National Association of Insurance Commissioners
NC	National Council
NDC	notional defined-contribution
NE	Neuchâtel
NICER	National Institute for Cancer Epidemiology and Registration
NPA	National Alcohol Programme
NPT	National Tobacco Programme
NW	Nidwalden
Obsan	Swiss Health Observatory
OECD	Organisation for Economic Co-operation and Development
OW	Obwalden
s&d	schnitz und drunder
SES	Statistics on Enterprise Structure
SG	St. Gallen
SH	Schaffhausen
SO	Solothurn
SZ	Schwyz
TG	Thurgau
TI	Ticino
TPF	Tobacco Prevention Fund
U.S.	United States
UR	Uri
VD	Vaud

VS	Valais
WHO FCTC	Framework Convention on Tobacco Control of the World Health Organization
WHO	World Health Organization
YPLL	years of potential life lost
ZG	Zug
ZH	Zurich

1 Introduction: Policy Innovation, Diffusion and the Characteristics of Innovative Policies

Most policy change is incremental, entailing adjustments to existing policies (cf. Lindblom 1958). Yet, at times, policy makers innovate. They adopt policies that have something genuinely novel about them – be it that they deal with a public problem that so far has been disregarded, bring about a shift in the goals pursued in a policy field or mark a new approach to achieving an established policy goal.

In view of the major departure from past practice that it brings about, policy innovation has intrigued political scientists ever since Walker (1969) published his seminal study on the innovativeness of the U.S. American states. Innovative policies often spread as different states successively adopt them. Explaining the adoptions of innovative policies and the resultant pattern of diffusion is the nucleus of policy innovation and diffusion research. Particularly the ways in which the innovation decisions of different states are linked to each other have captivated scholars' interest.

In accounting for policy innovation, political science research mainly draws on two categories of explanatory factors (cf. Berry/Berry 1990, 2007), i.e. internal conditions and interdependent decision making. Myriad studies show state-specific political, economic and social conditions, such as the ideological preferences of policy makers and citizens or the capacities of political institutions, to affect policy adoption (cf. Berry/Berry 2007; Graham et al. 2013). Similarly, there is ample evidence that the behaviour of other governments shapes the probability that policy makers innovate. Due to mechanisms such as learning, socialisation, competition or coercion, prior policy adoptions by other states impact on a government's innovation decision. Time and again, research has uncovered such instances of interdependent decision making (cf. Berry/Berry 2007; Graham et al. 2013).

In following Mohr's (1969) model of organisational innovation, Berry and Berry (1990) have argued that internal conditions and interdependent decision making may be integrated into a "unified model" of policy innovation because the variables in both categories divide into factors that shape the motivation to innovate, factors that set up obstacles to innovation and others that reflect resources available to overcome such obstacles. Since then, the unified model has turned into the dominant approach to analysing policy innovation. As such it has significantly expanded our understanding of the variety of internal determinants and the different forms of interdependent decision at work in innovation decisions on public policies.

Notwithstanding the impressive account of existing research, this study argues that an important element is missing from the above explanation, i.e. the characteristics of the innovation itself. Policies differ in terms of the objectives that they pursue, their contents, the means of intervention that they rely on, the groups that they target for benefits and burdens, and the delivery structures that they are based on. Policy attributes related to such design elements – as well as other policy characteristics – are likely to matter in innovation decisions. Most probably, they affect the motivation and resources for, and the obstacles to, innovation just as internal conditions and interdependent decision making do. What is more, policy characteristics are also likely to condition to what degree individual internal conditions and forms of interdependent decision-making matter in innovation choices.

That is why a focus on policy characteristics promises important insights on the determinants of policy innovation and diffusion. However, despite their enormous explanatory potential, political science diffusion research has thus far largely ignored the attributes of innovative policies. Currently, only a handful of studies (i.e. Mooney/Lee 1995; Brooks 2007; Nicholson-Crotty 2009; Boushey 2010; Makse/Volden 2011) yield empirical evidence on the effects of policy attributes on innovation and diffusion.

Research design

This study aims to contribute to exploring what difference policy characteristics make for the diffusion of innovative policies. It addresses three research questions:

- ***Do policy characteristics render some innovative policies more adoptable than others?***
- ***Do policy characteristics affect the importance of particular state characteristics ("internal determinants") for the adoption of innovative policies?***
- ***Do policy characteristics condition the weight of interdependent decision making ("diffusion effects") in innovation decisions?***

Scholars have dealt with different types of policy attributes, including characteristics that pertain to the nature of the issue (e.g. Gormley 1986) or problem (e.g. Peters/Hoornbeek 2005) that a policy addresses. This study focusses on attributes that relate to the specific solution that a policy entails, more specifically to its design. It works on the assumption that an innovative policy, as formulated by the pioneering state, exhibits specific characteristics that do not change while the policy spreads from one jurisdiction to others. Against this backdrop, it asks how such characteristics shape the choices made by potential adopters. Depending on the specific set of characteristics that the innovative policy entails, are subsequent adoptions more or less likely? Do aspects of the policy design prompt potential adopters to factor in the choices made by other governments – rather than responding exclusively to domestic forces? And, do characteristics that are integral to the policy design explain to what extent certain domestic factors are relevant for the likelihood of policy adoption?

Specifically, the study looks at four policy design characteristics: ***designated beneficiaries***, ***degree of intervention***, ***complexity*** and ***implementation costs***. For this set of attributes, various effects on the likelihood of policy adoption and on the relevance of particular internal determinants and diffusion effects for the likelihood of adoption are conjectured, which are grouped into the following principal hypotheses and related sub-hypotheses:

- The ***Policy Characteristics and Adoption Hypothesis*** postulates that policy design characteristics affect the likelihood that innovative policies are adopted. Concretely, it conjectures that children's policies are more likely to be adopted than policies that target other groups or the population as a whole for benefits. Furthermore, it expects policies that entail a low degree of intervention to be more likely to be adopted than highly-interventionist ones. Policy innovations that are based on simple designs are presumably more likely to be taken up than complex ones and innovative policies with low or invisible implementation costs more so than high-cost ones.
- The ***Policy Characteristics and Internal Determinants Hypothesis*** expects the relevance of specific state characteristics for policy adoption to depend on the design characteristics that the innovative policy features. Accordingly, it hypothesises government ideological preferences to be particularly relevant for the adoption of highly-interventionist policies, but less so for policies that entail a low degree of intervention. Furthermore, it conjectures state policy-making capacity to more strongly affect the adoption of complex than of simple policies. The fiscal situation of the state is expected to shape decisions on expensive policy innovations, but not on innovative policies with low or invisible implementation costs.
- The ***Policy Characteristics and Diffusion Effects Hypothesis*** links the former to the relevance of interdependent decision making among peer governments ("peer effects") for policy adoption. It suggests previous adoptions of the same policy by peers to hold more weight over the adoption of complex than of simple policy innovations. Similarly, it conjectures that peer effects more strongly affect the adoption of expensive innovative policies than of policy innovations with low or invisible costs.

As a basis for testing these hypotheses, this study analyses Swiss cantonal policies.[1] The Swiss cantons lend themselves to studying policy innovation due to their broad jurisdictional and fiscal competencies. What is more, Swiss citizens directly elect the members of cantonal governments and also have a direct say in cantonal policy making thanks to a wide range of direct-democratic rights. These conditions are likely to encourage policy innovation, while the manifold intercantonal networks among policy makers and public officials that exist facilitate the exchange of policy ideas and are thus likely to favour the diffusion of innovative policies.

In empirical terms, the analyses focus on cantonal policy making in ***public health*** – i.e. in disease prevention and health promotion. In line with the Federal Office of Public Health (BAG 2007: 14), ***disease prevention policies*** are defined as measures that aim at reducing risks for specific diseases, while ***health promotion policies*** comprise measures designed to strengthen individual or collective resources that are important for the preservation and promotion of health, without focussing on a particular disease.[2] Concretely, policies that aim at tobacco and alcohol prevention, the promotion of a healthy nutrition and the prevention of cancer provide the empirical basis for analysing the effects of policy attributes.

Event history analysis is used for that purpose, with the observation period extending from ***1993 to 2013*** and data coming from a variety of primary and secondary sources. Due to unforeseen difficulties in sampling suitable cantonal disease prevention and health promotion policies, this study cannot assess the role of policy design characteristics in innovation decisions as fully as originally intended. However, it presents ***first evidence*** on the theoretical issues raised above and substantiates its claim that policy design characteristics and their impact represent a highly worthwhile avenue for research.

Outline

Chapter 2 presents the state of the art in research on policy innovation and diffusion in a federal context. Being divided into four subchapters, the first one introduces the core concepts of policy innovation and diffusion and outlines the dominant framework of analysis in current scholarship. The following subchapters provide a tour d'horizon of research activities since the 1990s, summarise the insights from diffusion studies that account for policy attributes and present the findings from diffusion research on tobacco prevention policies.[3]

Chapter 3 is dedicated to the theoretical argument. It first clarifies the potential links between policy characteristics, innovation and diffusion and outlines the conceptual approach. The second subchapter presents and substantiates the hypotheses on the effects of policy characteristics on the dynamics of policy innovation and diffusion. Chapter 3.3 sets out the specification and operational definitions of the policy attributes studied.

In turning to empirical matters, Chapter 4 portrays public health policy making and implementation in Switzerland, before elaborating on the selection of specific policies. Thus, Chapter 4.1 describes the

[1] The cantons constitute the second highest state level in Switzerland. They have an intermediate position between the federal level (i.e. the Confederation) and the local level (i.e. the municipalities).

[2] For a more detailed definition of disease prevention and health promotion, see the WHO *Health Promotion Glossary* (WHO 1998). In the following chapters, besides "disease prevention" and "health promotion", the term "safety and health" will be used to more clearly differentiate between federal and cantonal competencies in public health. Safety and health aims at reducing health hazards that are beyond the control of individuals – frequently through regulatory means (BAG 2004: 14). Food, product and environmental safety, occupational safety and health as well as the prevention of the transmission of communicable diseases and the management of outbreaks of such diseases fall into this domain. In Switzerland, the legislative competencies for safety and health largely reside with the Confederation, while the cantons have the main responsibility for all other types of public health interventions.

[3] In the other three areas of disease prevention and health promotion covered in this study, i.e. alcohol, healthy nutrition and cancer, none or hardly any quantitative studies on policy diffusion exist.

divisions of competencies and fiscal responsibilities between the Confederation and the cantons and the forms of cooperation between the two state levels, points to the significant role of private actors in the field and presents the most important institutions of intercantonal exchange and cooperation. The following subchapter justifies the choice of cantonal disease prevention and health promotion policies as the empirical basis for this study, describes the criteria that guided the selection of policies and details the selection procedure as well as the difficulties encountered. Finally, Chapter 4.3 specifies the key concepts of "policy adoption" (and "implementation") and "diffusion" in the context of Swiss public health policy making.

Chapter 5 describes the six policies studied. For each policy, it outlines the following aspects: (1) the core content of the policy; (2) the background of policy adoption by the pioneering canton; (3) the ensuing pattern of diffusion; (4) variations in policy design across cantons; (5) the general design and the characteristics of the policy; (6) the federal and national contexts of cantonal policy adoptions.

Chapter 6 first presents the method of statistical analysis, i.e. event history analysis, and details the modelling choices made. Subsequently, it provides an overview of the variables that figure in the various types of event history models estimated as well as the data sources used. Finally, it discusses the specification and measurement of internal determinants. A description of data preparation and a discussion of data limitations complete this chapter.

Drawing on single event models, Chapter 7 sets out to explain the adoptions of four policies: ban on tobacco billboard advertising, ban on tobacco sales to children and adolescents, breast cancer screening programmes and restaurant food nutrition labelling.[4] After presenting the policy-specific results in four individual sub-chapters, Chapter 7.5 summarises the findings across policies.

Chapter 8 aims at disentangling the impact of the policy design characteristics of interest through the estimation of various types of models. The first section discusses the empirical constraints that the study faces and outlines the approach to hypothesis testing that it adopts in response to these constraints. Chapter 8.2 presents the results of "standardised single event models". More specifically, it models the adoptions of individual policies separately, but uses identical predictors across policies. This procedure allows for a comparison of findings across models, thus providing information on the second and the third research question raised above. Chapter 8.3 is based on a somewhat different approach. Reflecting a multiple events design, the policies of interest are pooled into one model. The policy design characteristics of concern are entered as explanatory variables (main effects) and are interacted with particular internal determinants and diffusion effects, thus furnishing evidence on all three research questions of interest. Chapter 8.4 summarises the results of the statistical analyses.

Chapter 9 concludes with summarising the evidence that this study provides, before discussing its contribution and limitations and suggesting avenues for further research.

The Appendix provides documentation on relevant cantonal and federal activities.

Please note that the contents of this study reflect the ***situation as in 2015***, i.e. at the time of its writing.

[4] Due to the small number of cantonal adoptions, single event models cannot be estimated on the two alcohol sales restrictions that are part of the sample. They are included into the multiple events model in Chapter 8.3, though.

2 State of the Art: Research on Policy Innovation and Diffusion

This study relates to a large body of research in political science that spans several sub-disciplines, including domestic politics (primarily U.S. American politics), comparative politics and international relations (Graham et al. 2013). This chapter provides an overview of the state of the art of policy diffusion research. The focus rests on research that deals with innovation and diffusion in a federal context, but work from the comparative politics and international relations literatures is selectively referred to. This chapter pursues three goals: (1) to familiarise the reader with the core concepts of the research tradition and the analytical model that is the backbone of current research; (2) to convey an idea of the richness of scholarship; and (3) to present pertinent research findings that will be used in later chapters for the specification of the models on cantonal policy adoptions.

Chapter 2 contains four subchapters. The first one introduces the core concepts of policy innovation and diffusion and presents Berry and Berry's unified model (Berry/Berry 1990), which the bulk of current scholarship on policy innovation and diffusion in political science is based on. In order to illustrate the wealth of research on policy innovation and diffusion in federal states, the second subchapter provides a tour d'horizon of research activities since the 1990s, charting developments in two areas – the study of dependent variables and of diffusion effects. Chapter 2.3 then summarises research on the impact of policy attributes on innovation and diffusion. The last subchapter presents insights from diffusion research on antismoking policies, which is the only area of public-health policy-making that diffusion scholars have extensively studied.

2.1 The Backbone of Current Research: The Core Concepts of Policy Innovation and Diffusion and Berry and Berry's Unified Model

Policy innovation and diffusion

Policy innovation is commonly defined to entail the adoption of any policy that is new to the government that introduces it (Berry/Berry 2007: 223). According to this definition, which originates in a study by Jack Walker (1969), a policy qualifies as an innovation if it is novel to a particular government irrespective of whether, when or how many times that policy has been adopted before by other political entities. Policy innovation is thus different from policy invention, i.e. the first conception of a unique policy idea (Mohr 1969: 112; Walker 1969: 881). As Berry and Berry (2007: 223; original emphasis) succinctly put it, "… a single policy *invention* can prompt numerous American states to *innovate*, some many years after the others."

Policy innovation is also to be distinguished from incremental policy change (cf. Lindblom 1958, 1959). While the latter involves the adjustment of existing policies, e.g. the modification of benefit levels of a transfer programme, policy innovation leads to the introduction of a new policy (Berry/Berry 2007: 223).

With regard to ***policy diffusion***, two different conceptions exist. In the most general sense, we can term any pattern of sequential policy adoptions as diffusion (cf. Gray 1973: 1175; Eyestone 1977: 441). Diffusion in this sense is synonymous with the dispersion of a policy throughout a political system, be it international (e.g. policies spreading from one nation state to others) or national (e.g. policies spreading among the constituent states of a federal state). It is mostly early studies on policy diffusion (e.g. Walker 1969; Gray 1973) that employ this definition. While exploring a wide variety of aspects, these studies share one commonality – they typically treat diffusion as the phenomenon to be explained, as the dependent variable (in a broad sense). In Elkins and Simmons' words, they focus on "diffusion-as-outcome" (Elkins/Simmons 2005: 37).

Recent research, in contrast, is more concerned with explaining governments' innovation decisions as such – rather than the overall pattern of dispersion resulting from these individual decisions. In doing

so, it treats diffusion as one specific class of explanatory factors. Scholars in this research strand suggest that a government's decision to adopt an innovation generally is a function of both domestic factors (e.g. the need for policy change; political, financial and administrative resources and constraints) and interdependent decision making, which factors in the decisions made by earlier adopters (Berry/Berry 2007). In deciding about the introduction of an innovative policy, governments may have various reasons for paying attention to the policy choices made by their counterparts: they might learn from, be socialised by, coerced by or compete with other governments (Braun/Gilardi 2006; Simmons et al. 2006). As a result, prior policy adoptions may alter the probability that a government introduces an innovation. This is what recent scholarship understands by diffusion (Elkins/Simmons 2005: 36; Simmons et al. 2006: 787; Braun/Gilardi 2006: 299). Diffusion captures the element in domestic policy making that reflects concerns with the decisions made by others – over and beyond internal factors that drive policy reform.[5] Diffusion thus stands for a certain set of independent variables; "diffusion-as-process" (Elkins/Simmons 2005: 37) designates a cause rather than an outcome.

In this study, "diffusion" is used to designate both instances of interdependent decision-making and the aggregate pattern of policies spreading across time and space since it is usually clear from the context whether the term refers to "diffusion-as-process" or "diffusion-as-outcome".

Regardless of the forces at work, policies may spread among jurisdictional units on the same level (***horizontal diffusion***) and/or they may spread bottom-up or top-down between jurisdictional units on different levels (***vertical diffusion***). A policy that spreads directly from one Swiss canton to others is an example of horizontal diffusion. In contrast, if a policy is pioneered by, let's say, the canton of Zurich, and then incorporated into federal legislation, with the federal government promoting the adoption of that policy by other cantons, this would be an instance of vertical diffusion, combining bottom-up and top-down processes.

The unified model

During the past 25 years, what Berry and Berry (1990, 2007) term the "unified model" has become the norm in research on policy innovation in federal states. In line with the "diffusion-as-process"-conception, this model, which Berry and Berry first presented in their study on state lottery adoptions by the U.S. states (Berry/Berry 1990), includes two main sets of independent variables in explaining states' innovation decisions – internal determinants and diffusion effects.[6]

Internal determinants comprise the domestic political, economic and social conditions that affect the likelihood of policy adoption. Berry and Berry divide these into three groups (Berry/Berry 1990: 399-400; 2007: 234-237): conditions that shape the motivation to innovate ($MOTIVATION_{i,t}$), such as problem severity, ideological preferences of decision makers and proximity of elections; factors that reflect the strength of obstacles to innovation ($OBSTACLES_{i,t}$); and factors that impact on the resources to overcome these obstacles ($RESOURCES_{i,t}$). Resources and obstacles entail both state characteristics in the classic sense (e.g. fiscal and government capacity) and domestic conditions that reflect the

[5] A pattern of sequential policy adoptions is usually caused by both internal factors and interdependent decision making. However, political units may also learn about innovative policies from others, but then decide to adopt these for purely domestic reasons (Berry/Berry 2007: 232). Sequential policy adoptions may thus result from independent decision making. From the "diffusion-as-outcome" perspective, such instances of adoptions would still be considered as "diffusion". From the point of view of the "diffusion-as-process" strand, however, such adoptions present a pattern of policy dispersion that is unrelated to diffusion effects proper. Therefore, Braun and Gilardi (2006: 299) use the term "spurious diffusion" for such phenomena.

[6] Both internal determinants and diffusion effects feature prominently in earlier research – as a matter of fact, they were spelled out as early as in Walker's study (1969). Berry and Berry (1990), however, were the first to integrate these two categories of explanatory factors into a single theoretical framework that could be tested empirically.

societal demand for, and opposition to, an innovative policy, e.g. the strength of particular interest groups.

Diffusion effects ($EXTERNAL_{i,t}$) capture the influence that the behaviour of other states exerts on the innovation decision of a government. Political science research has identified four foundations of interdependent decision making, i.e. four ***mechanisms of diffusion*** (cf. Graham et al. 2013: 690). First, governments that adopt a new policy face considerable uncertainty as to how well it will address the relevant policy issue and what its political repercussions will be. Prior adoptions by other states permit decision makers to more reasonably assess the costs and benefits associated with policy innovation (Meseguer 2005; Simmons et al. 2006: 795-799). Thus, the search for effective and politically viable policy solutions prompts endeavours to take advantage of the experiences of others. Here, innovation decisions are interdependent because states ***learn*** from each other.

Governments' quest for legitimacy and reputational gains may be another force prompting policy diffusion (Elkins/Simmons 2005: 39-41; Simmons et al. 2006: 799-801). If an innovative policy finds increasing acceptance in a federal system, being adopted by an ever-growing number of states, it might come to be seen as a national standard – as the appropriate way of handling a particular policy issue. Irrespective of whether decision makers actually favour the innovative policy, they may feel compelled to adopt it since falling behind an established practice might put their reputation at risk – both with their electorate at home and with their colleagues from other states (cf. Walker 1969: 890-891). This diffusion mechanism is termed "***socialisation***".

Further, diffusion effects may also occur because of ***competition*** (Simmons et al. 2006: 792-795). The introduction of a new policy might produce negative externalities for other governments, which may find that they have to adopt a similar policy regardless of their own political preferences. Certain economic policies are a case in point: Provided that the constituent units of a federal state enjoy strong fiscal and regulatory competencies, they are in a position to compete for mobile capital and tax-payers. If a subnational government in a federal system introduces a policy innovation that serves to increase the attractiveness of its territory as a business location or place of residence, other states may do the same – out of fear that they lose out in the competition for scarce resources otherwise.

Coercion constitutes the fourth diffusion mechanism (Simmons et al. 2006: 790-791).[7] In a federal state, governments at lower state levels may be made to adopt a policy innovation by federal imposition or inducements. Provided that both the federal government and lower state levels are authorised to legislate on a policy issue, the federal government can use its superior competencies to mandate states to introduce an innovative policy. If jurisdiction is reserved to the states or the federal government does not want to make use of mandates, it may offer financial rewards to the states in exchange for adopting the federal level's preferred policy solution.

In addition to internal determinants and diffusion effects, the unified model comprises one more group of explanatory variables, which represent the relationship between the innovation concerned and previous policy choices of the potential adopter ($OTHER\text{-}POLICIES_{i,t}$). Policies adopted before might be complementary to, conditions for, or substitutes of the policy of interest and therefore impact on the likelihood of policy adoption (Berry/Berry 2007: 238-239).

As a whole, the unified model has the following form (Berry/Berry 2007: 237):

$$ADOPT_{i,t} = f\,(MOTIVATION_{i,t},\ RESOURCES/OBSTACLES_{i,t},\ OTHER\text{-}POLICIES_{i,t},\ EXTERNAL_{i,t})$$

[7] Some scholars do not regard coercion as a diffusion mechanism (e.g. Elkins/Simmons 2005; Maggetti/Gilardi 2016). In their view, diffusion is characterised by *uncoordinated* interdependent decision making. Accordingly, neither vertical forms of influence nor horizontal forms of cooperation and joint policy making qualify as diffusion (cf. Elkins/Simmons 2005: 35).

As many of the independent variables included in the model are susceptible to change over time, the correct estimation of their effects requires a longitudinal research design, which reflects when a state adopts the policy of interest. Therefore, event history analysis, which models both the occurrence of an event and its timing, has become the standard approach to specifying the unified model (cf. Box-Steffensmeier/Jones 2004: 1).

More specifically, the above equation breaks the period of observation into discrete time intervals (usually years), with the observations being state-years (Berry/Berry 1990: 398). Each state (i) in each of the years (t) studied forms one observation. The dependent variable ($ADOPT_{i,t}$) is the likelihood that a state adopts a policy innovation in a given year. While the likelihood of adoption (hazard probability in statistical terms) cannot directly be observed, actual adoptions may be used to estimate it. For that purpose, the observations are coded 1 in the year of policy adoption and 0 in all previous years. Once a state introduces the policy, it drops out of the sample as it is no longer "at risk" of adoption (Berry/Berry 1990: 398).

2.2 Tour d'Horizon: Advances in Research on Policy Innovation and Diffusion in Federal States since the 1990s[8]

Since its formulation in 1990, numerous scholars have made use of the unified model in order to gain a better understanding of the factors that drive state or local innovation choices in diverse policy fields. As a result, a myriad of studies exists – Graham et al. (2013: 677) count 189 political science articles in American politics for the period 1958 to 2008, with about two thirds of them having been published since 1990. And while research on interdependent decision making in a federal context is particularly extensive in the U.S., subnational units in other countries, such as the Swiss cantons[9], Brazilian cities (Borges Sugiyama 2008), English local authorities (Walker et al. 2011), South Korean municipalities (Kim 2013) and the German states (Kern et al. 2007), have also been the subject of diffusion research. Besides an impressive expansion in terms of policy fields and specific policies studied, research has also made significant substantive and methodological advances over the years. In quantitative research, most of these advances have taken place within the framework of the unified model. Providing a complete overview of policy innovation and diffusion research since the 1990s is beyond the scope of this subchapter.[10] Rather, the following sections outline the two most important developments in empirical research – advances in the study of dependent variables and diffusion effects.[11] Influential or typical studies are outlined so as to illustrate these advances.

A wider spectrum of dependent variables

Berry and Berry's classic study on U.S. state lotteries (Berry/Berry 1990) centres on policy adoption and thus on the decision-making stage of the policy cycle. It uses a dichotomous indicator of policy adoption in a given year as the dependent variable. A cursory inspection of the literature shows that a substantial share of published work on policy diffusion in federal states similarly focuses on policy

[8] There is an extensive body of qualitative research, which mostly adopts a policy transfer perspective (see Dolowitz/Marsh 1996), but also entails studies that are framed in policy diffusion terms (e.g. Mossberger 2000; Cohen-Vogel/Ingle 2007; Koski 2010; van der Heiden/Strebel 2012). The following account is limited to quantitative policy diffusion research.

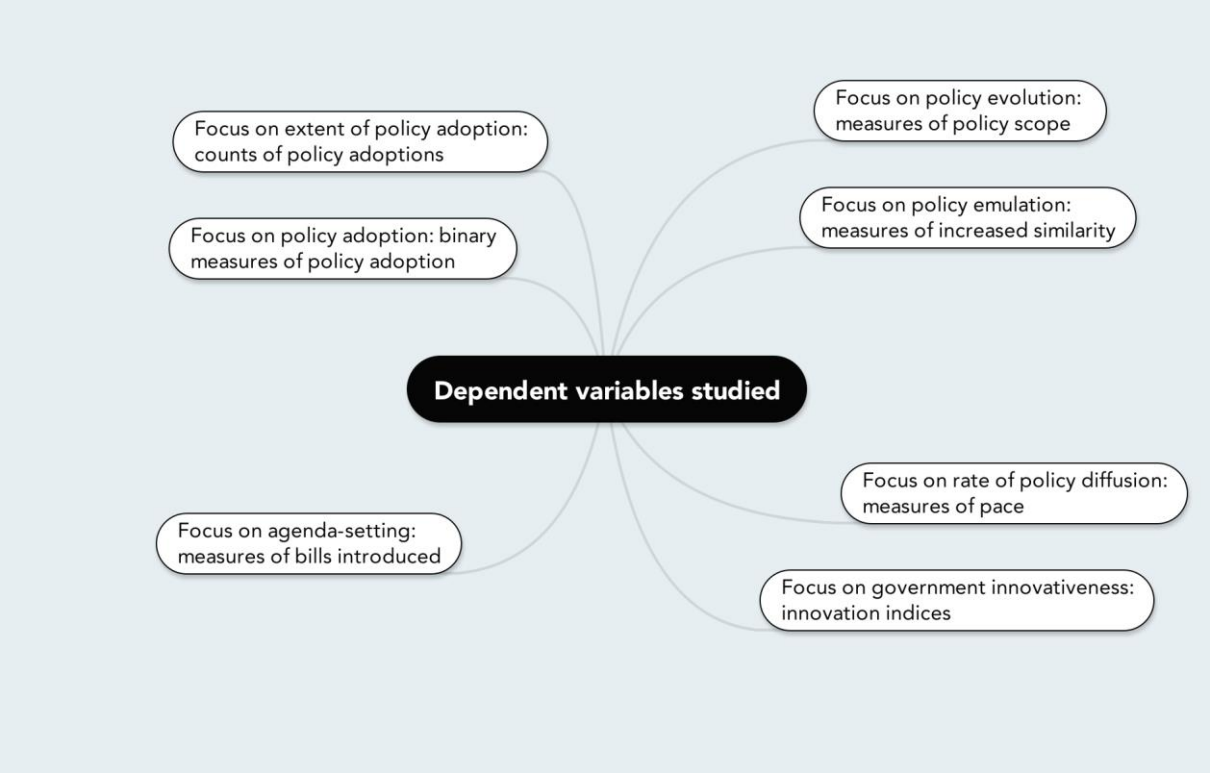
[9] For policy diffusion research on the Swiss cantons, see: Widmer and Rieder (2003), Schaltegger (2004), Feld (2006), Kübler and Widmer (2007), Gilardi and Füglister (2008), Strebel (2011, 2012), Füglister (2012a, 2012b), Wasserfallen (2014) and Gilardi and Wasserfallen (2016).

[10] For other reviews, see Berry and Berry (2007), Karch (2007), Graham et al. (2013), and Maggetti and Gilardi (2016).

[11] Scholars have also invested a great deal of effort into the study of state characteristics that explain policy adoption, which has significantly improved our understanding of the factors that are relevant in different policy fields. These advances are not described here. For a literature review up to 2006, see Berry and Berry (2007: 234-237). Graham et al. (2013: 685-688) also summarise relevant findings.

adoption as the phenomenon to be explained. However, as can be seen from Figure 1, the range of dependent variables that have been given scholarly attention has significantly broadened since 1990.

Figure 1: Spectrum of dependent variables



Source: Own classification.

In Figure 1, seven conceptions of dependent variables (in a broad sense) that correspond to different research foci are distinguished. Besides the classic dependent variable of ***policy adoption***[12], these include the ***extent of policy adoption***, the ***evolution of policy content***, ***policy emulation***, ***agenda-setting***, the ***rate of policy diffusion*** and ***government innovativeness***.

To begin with, policy diffusion research has recognised that policy adoptions do not need to be singular events. Rather, jurisdictions may simultaneously and/or successively ***adopt multiple variants of the same policy or similar types of policies***. In order to account for such phenomena, researchers substitute the classic binary dependent variable of policy adoption for a count variable that captures the number of adoptions in each year. Moreover, this shift in research focus implies that the jurisdictions studied do not drop out of the dataset upon first policy adoption, but rather remain in it until the end of the observation period.

Thus, in a study on the determinants of institutional reforms that the Swiss cantons adopted between 1990 and 2000, Widmer and Rieder (2003) focus on the total number of institutional reforms as well as the number of New Public Management reforms. In doing so, they draw on a comprehensive dataset on institutional reforms, including reforms that pertain to cantonal administrations, parliaments, governments, courts, territories, citizen political rights and intra-cantonal revenue-sharing systems.

[12] For a critical discussion of the dependent variable most commonly used in quantitative diffusion research, see Strebel and Widmer (2012). The authors argue that the dichotomous measure of policy adoption does not fully reflect the nature of diffusion processes – first, because it does not record instances where a policy idea, but not the policy itself diffuses, and secondly, because it does not differentiate between instrumental and symbolic instances of policy adoption. As an alternative to the binary indicator of policy adoption, Strebel and Widmer (2012) suggest a fourfold typology.

Boehmke and Witmer (2004), who examine the evolution of agreements between the U.S. states and Indian nations on the operation of gaming facilities in the period from 1989 to 2000, also base their analyses on a count variable, i.e. the number of agreements concluded in each year. An investigation into the factors that influence cantonal support for a federal drug prevention programme by Kübler and Widmer (2007) also pursues this line of research. Instead of capturing the adoption of specific policies, a count of the number of positive references to the federal programme made in cantonal executive, parliamentary and popular decisions on drug policy constitutes the dependent variable.

Beyond policy adoption, scholars have taken an interest in ***the evolution of the content of the policies that spread***. Accordingly, they seek to explain the scope, extensiveness, stringency or similar aspects of policies and the evolution of policy content over time, while being particularly interested in the interdependent nature of this evolution. Different strands of research share this focus. One of them is the literature on competitive pressures in subnational welfare or tax policy making, in particular on whether or not interdependent decision-making leads to a race to the bottom.[13] In these studies, tax or benefit levels are the dependent variables. Another pertinent strand of research is the work on ***policy reinvention***. The term "policy reinvention" designates two different phenomena – first, the modification of policy content during the diffusion process in the sense that later adopters introduce qualitatively different policies from earlier ones (e.g. more stringent policies); and secondly, the intra-state modification of innovative policies sometime after adoption has occurred (Glick/Hays 1991: 837-838). Both the study of policy reinvention in the second sense and research on tax and welfare competition are effectively associated with a shift in attention from policy innovation to more incremental forms of policy change.

Empirical research on policy reinvention dates back to the early 1990s and includes work on living will legislation (Glick/Hays 1991), child abuse reporting, crime victim compensation and public campaign funding laws (Hays 1996a, 1996b), abortion regulation (Mooney/Lee 1995) and workplace drug testing legislation (Lamothe 2004) in the U.S. states. In general, this body of early research examines both across- and within-state reinvention and uses correlational and graphical analyses as a means of uncovering the links between timing of adoption and policy content.

More recent research on policy reinvention, such as the works of Daley and Garand (2005), Kim and Jennings (2012) and Karch and Cravens (2014), makes use of statistical methods for cross-sectional time-series data that have become available in the meantime. Being interested in the determinants of the strength of U.S. state hazard waste site programmes, Daley and Garand (2005) develop an eleven-point index that compares state programmes to a parallel federal programme and records the number of federal programme characteristics that the respective state programme matches. Kim and Jennings (2012) look at the evolution of two types of Medicaid managed care programmes between 1991 and 2000 in the U.S. states, using the percentage of Medicaid beneficiaries covered by each programme variant as a measure of programme extensiveness. The inclusion into the model of several variables that reflect programme maturity allows for an assessment of the link between timing of innovation and programme extensiveness. In addressing the research question of whether the same or different factors drive the adoption and the subsequent modification of policies respectively, Karch and Cravens (2014) analyse the diffusion and evolution of "Three Strikes and You're Out Laws" among the U.S. states between 1994 and 2012. They estimate separate models for policy adoption and reinvention. A dichotomous dependent variable that reflects whether or not a state significantly changed the policy in a given year (in the sense of making it less punitive) serves as the dependent variable in the reinvention models.

[13] Examples of policy diffusion research on tax and welfare competition are Volden (2002), Berry et al. (2003), Allard (2004), Bailey and Rom (2004), Berry and Baybeck (2005), Martin (2009), Wasserfallen (2014) and Gilardi and Wasserfallen (2016).

The third research focus also rests on more incremental forms of policy change, more specifically on the adoption or modification of policy components. Yet, instead of recording changes in components as such, scholars trace the extent to which a particular state's policy changes in a given year move its policy design closer to those of other states. The degree of convergence of policy designs, i.e. the dependent variable, may be termed "***emulation***" (cf. Volden 2006; Boehmke 2009a; Shipan/Volden 2014).[14] This analytical approach requires a modification of the framework of the unified model in that dyad-years replace state-years as observations, with dyads being made up of pairs of states.[15]

Developing such a dyadic framework, Volden (2006) studies changes in the Children's Health Insurance Programme as implemented in the U.S. states in the period from 1998 to 2001. In assessing the similarity of state programmes, he looks at six dimensions of programme design. The dependent variable is coded 1 if most changes that state A ("receiver") implements in a given year move it closer to the programme characteristics of state B ("sender") and 0 otherwise.

Subsequent to Volden's introduction of the dyadic model into the field of American politics, several other empirical studies on policy diffusion in federal systems made use of this approach, including Füglister (2012a, 2012b) and Shipan and Volden (2014). Building on earlier work by Gilardi and Füglister (2008), Füglister (2012a, 2012b) studies the evolution of Swiss cantonal health insurance subsidies between 1997 and 2007. Based on a comparison across four dimensions of subsidy policies, cantons are recorded as having taken up the policy of another canton if they move towards the latter on at least one dimension. Finally, Shipan and Volden (2014) analyse the adoption of 16 elements of laws that are to restrict youth access to cigarettes, calculating the number of moves that state A makes towards state B as well as the number of moves that it makes away from state B. On this basis, they construct two dependent variables – a binary variable that indicates whether state A overall moves towards state B and a variable that captures the direction and the extent of movement across the 16 elements.

Furthermore, several scholars have moved policy diffusion research from the decision-making stage of the policy cycle to the phase of ***agenda-setting***. Instead of, or in addition to, modelling subnational policy adoption, they seek to explain the dynamics of policy proposals finding their way onto government agendas and pay particular attention to horizontally or vertically interdependent agenda-setting processes. Studies by Mintrom (1997), Andrews (2000), Karch (2012) and Pacheco and Boushey (2014) are examples of this line of research.

Being motivated by an interest in the influence that policy entrepreneurs exert on agenda-setting and decision making, Mintrom (1997) studies the parliamentary consideration and the adoption of school choice reforms in the U.S. states between 1987 and 1992. "Consideration", i.e. the dependent variable that taps into agenda-setting, is a binary measure of any specific action that the competent parliamentary committee takes on school choice reforms. In his study on U.S. state regulatory reforms of the electricity sector between 1993 and 1999, Andrews (2000) analyses, among other dependent variables, a specific manifestation of agenda-setting processes, i.e. the inauguration of official studies on policy reform. More specifically, he looks at the initiation of the first formal study on pro-market reforms of the electricity sector by state public utilities regulatory commissions or by state parliaments.

The more recent research articles by Karch (2012) and Pacheco and Boushey (2014) focus on bill introductions in U.S. state parliaments. Karch (2012), who is interested in the impact of national political debates on state agenda-setting, analyses the introduction of embryonic stem cell research bills between 1999 and 2008. He models both the probability that a bill is introduced and the number of bills introduced. Driven by a research interest in various inter- and intra-governmental influences

[14] It is important not to confuse "emulation" in the sense of intended policy convergence with the diffusion mechanism of socialisation, which is also sometimes termed "emulation" (e.g. Simmons et al. 2006).

[15] See Gilardi and Füglister (2008) for a practical guide to dyadic event history analysis and Boehmke (2009a) for the discussion of a particular concern with the construction of dyadic datasets.

on state agenda-setting processes, including national, gubernatorial and neighbouring states' attention to the relevant policy issue, Pacheco and Boushey (2014) study the number of bills on tobacco control and vaccine regulation introduced in the U.S. states between 1990 and 2010.

Finally, there are two strands of research that are different from the research foci outlined above in that they study policy innovation and diffusion at highly aggregated levels, based on the analysis of large samples of policy innovations. The first one focuses on the temporal pattern of diffusion, particularly on the rate at which policies spread. The second one is interested in state innovativeness, assuming that some states are inherently more innovative than others. Both strands of research connect up to scholarly work that predates the formulation of the unified model and take advantage of the fact that more sophisticated statistical methods can nowadays be applied to studying large-scale aggregations of policies.

Being intrigued by the fact that the temporal pattern of diffusion of some policies does not correspond to the familiar S-shaped cumulative distribution function[16], Nicholson-Crotty (2009) explores the impact of two policy attributes, i.e. the salience and the technicality of the policy issue, on the ***rate of diffusion***. For that purpose, he draws on a sample of 57 previously studied policies, which spread among the U.S. states between 1850 and 2001. The rate of diffusion is measured with a dichotomous variable that reflects whether over 50 percent of states adopted the respective policy within the first third of the diffusion process. Using a sample of 81 previously studied policies from diverse areas, Boushey (2012) applies the insights of punctuated equilibrium theory to explaining temporal variations in policy diffusion. He directly models the shape of the cumulative distribution functions, with the number of adoptions in each year serving as the dependent variable.

Regarding ***state innovativeness***, two researchers recently updated Walker's innovation score for the U.S. states (Walker 1969) – Boushey (2010: 99-103) and Boehmke and Skinner (2012). Boushey's innovation index is based on 133 policies; Boehmke and Skinner's measure of state innovativeness draws on 137 policy innovations. Both range from 0 to 1, with larger values reflecting higher levels of innovativeness, but differ in the way that they are constructed. After elaborating on the construction of these indices, both studies examine variations in state innovativeness over time and explore the determinants of innovativeness.

Study of diffusion channels and mechanisms[17]

In explaining the adoption of state lotteries, Berry and Berry (1990) modelled interdependent decision making with a neighbour-based diffusion variable. Since then, scholars have significantly extended and refined the study of diffusion effects. Broadly speaking, research on how previous policy choices by other units shape a government's innovation decision divides into two strands – the analysis of ***diffusion channels*** and of ***diffusion mechanisms***.

Diffusion channels designate the paths along which policies spread; they are a function of the communication networks that exist between jurisdictions and the reference groups that potential adopters of an innovative policy have (cf. Rogers 2003: 18-20; Berry/Berry 2007: 225). ***Diffusion***

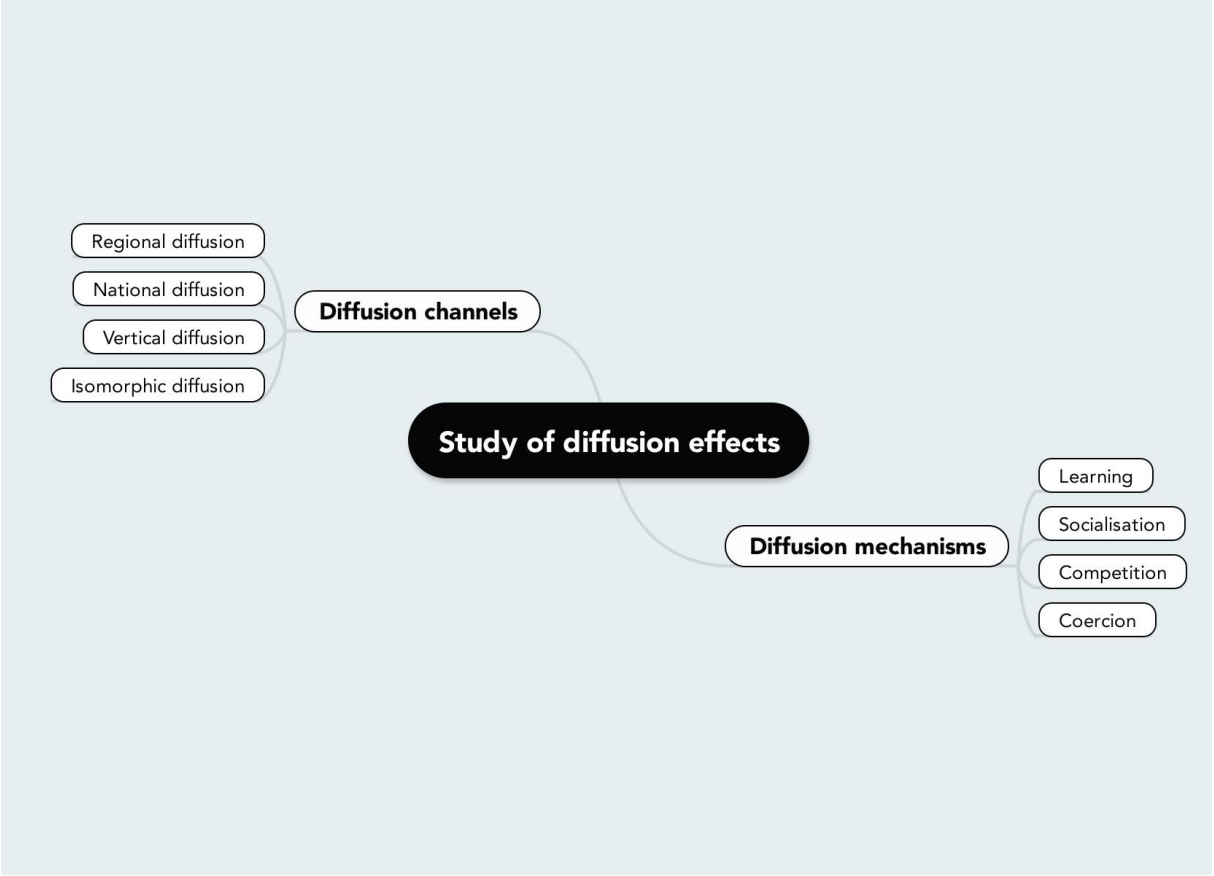
[16] When plotting the cumulative number or proportion of adopters against time, an S-shaped curve emerges if a few states adopt the policy early in the diffusion process, the number of adopters then steadily rises, before it drops off in the final phase. This temporal pattern, which characterises the diffusion of many innovations, has been found in diffusion research more generally (Rogers 2003).

[17] For a critical assessment of this body of research, see Volden et al. (2008). The main criticism of the authors is that the research designs of most studies do not permit a clear distinction between interdependent policy making and instances of spurious diffusion (see also footnote 5).

mechanisms encapsulate the rationale for states' consideration of the behaviour of other jurisdictions (Braun/Gilardi 2006: 299). Figure 2 charts diffusion channels and diffusion mechanisms.[18]

Prior to fleshing out these diffusion effects and to presenting relevant scholarship, a note on the relationship between the two main branches in Figure 2 is due. Diffusion channels and mechanisms shed light on different aspects of the same phenomenon. In that sense, channels and mechanisms are intrinsically linked – learning, socialisation, competition and coercion unfold through more or less institutionalised networks of communication, and conversely, the diffusion of policy innovations through national, regional, vertical or isomorphic networks is rooted in particular diffusion mechanisms. In other words, channels describe the where and mechanisms the why of diffusion.[19]

Figure 2: Diffusion channels and diffusion mechanisms



Source: Own illustration, classifications based on Berry and Berry (2007) and Simmons et al. (2006).

The distinction between diffusion channels and mechanisms is an analytical division. As such, it is helpful in structuring policy innovation and diffusion research and in providing a systematic overview

[18] The classification of diffusion channels is based on Berry and Berry (2007). The fifth channel that Berry and Berry discuss, i.e. "leader-laggard diffusion", is not covered here because of the scarcity of relevant empirical research. The categorisation of diffusion mechanisms is taken from Simmons et al. (2006), with the second mechanism being termed "socialisation" here (instead of "emulation"). While a plethora of terms for describing the forces that drive diffusion exist (cf. Graham et al. 2013: 690), several scholars have made the point that these descriptions can be subsumed under three or four generic mechanisms (Elkins/Simmons 2005: 38-45; Graham et al. 2013: 690-693; Maggetti/Gilardi 2016).

[19] Individual diffusion channels and mechanisms are largely independent of each other. For example, if we look at top-down diffusion influences from the federal to state governments, we may come across instances where states learn from, are socialized by, or are coerced by the federal government. Coercion is mostly confined to the relationship between the federal government and subnational units, though. Since the constituent states in a federal system have equal rights, they are generally not subject to coercive pressures from other states.

of the literature. But it somewhat simplifies the reality of research. Certainly, some scholars focus on particular diffusion channels and other research clearly centres on specific diffusion mechanisms. However, many studies broach the issues of diffusion channels and mechanisms in some way – be it that particular diffusion mechanisms are specified as the theoretical foundation of the diffusion channel of interest (e.g. Tucker et al. 2012); that a particular diffusion channel is identified as the location where a specific diffusion mechanism materialises (e.g. Gilardi/Wasserfallen 2016); that diffusion mechanisms and channels are simultaneously studied (e.g. Füglister 2012a, 2012b); or that diffusion channels are used as a proxy for the diffusion mechanism of interest (e.g. Oakley 2009). Moreover, many studies focus on more than one diffusion channel or mechanism. In short, individual studies do not always fall neatly into the categories established in Figure 2. In the sections below, research contributions are subsumed under the category that they correspond to most closely and, if appropriate, may also be referred to more than once.

As regards diffusion channels, ***regional***, ***national***, ***vertical*** and ***isomorphic forms of interdependent policy making*** can be distuinguished (cf. Berry/ Berry 2007: 226-231). Each of these has been the subject of research, with many contributions accounting for more than one channel.

Regional diffusion effects are certainly the ones most extensively studied. As Berry and Berry (2007: 228-229) state, two variants of regional models exist – ***neighbour models*** and ***fixed-region models***. ***Neighbour-based diffusion*** posits that the innovation decision of a particular state is related to the prior policy choices of the states that it shares a border with. Interdependent decision making is thus assumed to be associated with geographic proximity. Generally speaking, the diffusion variables used (i.e. the number or proportion of adopters among neighbouring states) absorb such effects without revealing the exact nature of communication patterns or diffusion mechanisms at work.

Neighbour models are prevalent in diffusion research. Here, two examples are provided that haven taken the set-up of neighbour-based diffusion studies one step further. In their work on the parliamentary attention to, and the adoption of, school choice reforms in the U.S. states, Mintrom and Vergari (1998) provide insights on the actual importance of policy networks. Besides the classic neighbour-based diffusion effects, they estimate the effect of the use of external policy networks by the most important policy entrepreneur in school choice reform in each state. The identification of policy entrepreneurs and the measurement of the extent to which the key policy entrepreneur networked with external actors in neighbouring and other states are based on a survey among educational policy experts in all states.

Tucker et al. (2012), in turn, do not only demonstrate the existence of interdependent decision making among neighbours, but also go to great lengths to specify the forces that drive this diffusion pattern. Concretely, they model U.S. state adoptions of a specific type of concealed weapons permit laws between 1974 and 2007, with neighbour-based diffusion being one of the key explanatory variables. Based on the findings of criminological research, they substantiate why state gun policy making is likely to be driven by a concern for the behaviour of neighbouring states. Specifically, they argue that a particular state's adoption of more permissive concealed weapons permit laws prompts criminal offenders to shift their activities to surrounding states where their victims are less likely to be armed. Hence, neighbouring states that do not allow their citizens to carry concealed weapons run the risk of criminal spillover effects. They therefore face a strong incentive to emulate the policy from earlier adopters. Besides neighbour-based diffusion, Tucker and his co-authors also account for fixed-region diffusion, based on a variable that captures the percentage of adopters in the same census region.

Similar to neighbour models, ***fixed-region models*** hypothesise policies to spread first and foremost among geographically proximate subnational units. However, rather than the surrounding states, all states in a given region are considered to serve as the reference group of potential adopters. Some scholars delineate the regions on the basis of geographic proximity alone, such as the U.S. census regions (e.g. Tucker et al. 2012). Other studies focus on regions that are constituted and connected by

joint intergovernmental institutions, which facilitate interaction among government officials and may provide the basis for the unfolding of diffusion mechanisms such as learning or socialisation. For example, Andrews' (2000) study on electricity industry reforms analyses diffusion effects among the North American Electric Reliability Council regions and Daley and Garand (2005) look at regions as designated by the U.S. Environmental Protection Agency.

In Switzerland, numerous intercantonal associations of government members, chief public officials and technical experts exist, most of which have regional subdivisions (Vatter 2014a: 136-138). Hence, it is not surprising that regional diffusion effects figure prominently in diffusion research on the Swiss cantons. Thus, Strebel (2011, 2012) models how the share of previous adopters that are members of the same regional association of cantonal energy officials impacts on a given canton's likelihood of introducing various energy policy innovations. Being based on a dyadic approach, Füglister (2012a, 2012b) accounts for fixed-region diffusion effects through a dummy variable that captures joint membership of the cantons within a dyad in one of the four regional conferences of public health ministers. Gilardi and Wasserfallen (2016) present an interesting case of fixed-region effects in that they demonstrate personal income tax rates to be *less* correlated among cantons that belong to the same regional conference of cantonal finance ministers than among other cantons (for the reasons, see page 18).

National diffusion models presume the existence of national communication networks that expose state officials to policy ideas from anywhere in the country (over and above geographically proximate states) (cf. Berry/Berry 2007: 226). In its simplest form, the specification of national diffusion effects is based on a variable that records the number or share of previous adopters nationwide. This specification rests on the assumption that states are equally likely to interact with each other and that the innovation decision of a potential adopter depends on the number, but not on the characteristics of previous adopters (Berry/Berry 2007: 228).

As Balla (2001) demonstrates, national diffusion models can be modified so as to account for differences in interaction and in exposure to stimuli for innovation. His research article centres on the National Association of Insurance Commissioners (NAIC). The NAIC is an interstate professional association that links the insurance regulatory agencies of the U.S. states and that formulates model laws and regulations, which are recommended to the states for adoption. In explaining state adoptions of a NAIC model act on health maintenance organisations (HMOs), Balla tests the relevance of several diffusion variables that pertain to the composition of the NAIC committee that was responsible for drafting the HMO model legislation. The diffusion variables he uses capture whether or not the state insurance commissioner was a member of the committee in the respective year, in the previous three years, or even served as the chair or vice-chair of the committee in the respective year.

Similar to Balla, Strebel (2011, 2012) analyses what impact the endorsement of intergovernmental model regulations has on subnational policy adoptions. He does not focus on the participation, or degree of participation, of state officials in particular bodies of the relevant intergovernmental organisation, but incorporates into his models a dummy variable for the adoption of model regulations. Füglister (2012a, 2012b) also adapts Balla's work to the Swiss context. Besides accounting for regional diffusion, she tests if joint membership of cantonal health ministers in the board of directors of the national conference of health ministers increases the likelihood of policy emulation.

While regional and national diffusion capture phenomena of interdependent policy making among jurisdictions on the same state level, ***vertical diffusion models*** attend to influences across levels. In federal systems, policies may travel upwards, e.g. from cities to states or from states to the federal government, as well as downwards from higher to lower state levels. Research on vertical diffusion more often deals with ***top-down*** than with ***bottom-up diffusion***.

Regarding ***top-down influences*** from the federal level to the states, scholars have shed light on a range of potential factors of influence. These include financial incentives (Allen et al. 2004; Karch 2006; Boushey 2012), policy adoption within the federal realm as a way of example-setting (Grossback et al. 2004), specific statutory provisions that facilitate or impede state policy adoptions (Karch 2006; Kim/Jennings 2012), the communication of federal policy preferences (Allen et al. 2004; Kim 2013), policy debates (Karch 2012; Pacheco/Boushey 2014; McCann et al. 2015) and stalemate at the federal level (Allen et al. 2004).[20] In addition, Shipan and Volden (2008) explore the effects of state-level influences (specifically of state legislation on the policy issue, including the enactment of pre-emptive clauses) on local policy adoptions.

As regards ***bottom-up diffusion***, Shipan and Volden (2006) study whether local adoptions of antismoking policies increase ("snowball effect") or decrease ("pressure valve effect") the likelihood that state governments adopt such policies. For that purpose, they trace the diffusion of three antismoking policies among the U.S. states between 1975 and 2000. Riverstone-Newell (2013), in turn, is interested in whether local governments succeed in eliciting policy change at the state level through the adoption of bill of rights resolutions, which do not fall under local jurisdiction.

Finally, ***isomorphic diffusion*** assumes that potential adopters look to jurisdictions that are similar in terms of relevant characteristics when deciding about policy innovation (Berry/Berry 2007: 230-231). Researchers have studied various aspects of similarity between potential and previous adopters, such as government ideology, implementation structures, demographics, budgetary situation, problem severity, economic structure and language.

Grossback et al. (2004) emphasise the importance of ideological cues that are inherent in previous adoptions. Based on the assumption that potential adopters are uncertain as to where innovative policies are located on a liberal-conservative continuum, decision makers are expected to use the ideological position of previous adopters as a cue. In order to test this supposition, the authors gauge the explanatory power of ideological similarity with regard to U.S. states' adoptions of lotteries, academic bankruptcy laws and sentencing guidelines. In measuring ideological similarity, they construct a variable that captures the differences in ideological position between the potential adopter and all previous adopters, with the most recent adopter being given the same weight as all other adopters. Moreover, for sentencing guidelines, which exist at the federal level and allow for parallel federal and state legislation, Grossback and his co-authors model the effect of ideological distance between potential state adopters and the federal government.

Besides ideological diffusion, Strebel (2012) looks at similarities in energy policy implementation structures among the Swiss cantons. More specifically, he distinguishes between cantons where the responsibility for policy delivery resides with the canton itself and cantons that delegate this task to the municipalities. Accordingly, he incorporates a variable that reflects the percentage of previous adopters with the same implementation structure into his models on the determinants of cantonal adoptions of innovative energy policies.

Since dyadic approaches to the study of policy diffusion are particularly amenable to the analysis of the impact of shared state characteristics (Gilardi/Füglister 2008: 418), several authors in this field shed light on isomorphic diffusion processes. In his analysis of policy changes in the Children's Health Insurance Programme, Volden (2006) assesses the effects of political, demographic and budgetary similarities among states. As Switzerland is a multilingual country, Kübler and Widmer's (2007) study on cantonal support for federal drug prevention policy and Füglister's (2012a, 2012b) research on the emulation of cantonal health subsidy policies examine shared language as an aspect of similarity. Shipan and Volden (2014) account for four aspects of similarity in their explanatory models on the adoptions of youth tobacco access provisions: partisan composition of government, government

[20] For a more detailed account of this body of research, see Chapter 4.3.

ideology, problem severity (i.e. percentage of smokers) and economic structure (i.e. tobacco production).

Apart from uncovering the regional, national, vertical or isomorphic patterns of diffusion, scholars have endeavoured to empirically establish the rationales for interdependent decision making, i.e. the ***mechanisms of diffusion*** (see Chapter 2.1).[21] Is it the quest for legitimacy, competitive pressures, the search for politically viable and effective policy solutions, coercive influences or some combination of these mechanisms that prompt decision makers to take previous policy choices of other jurisdictions into account?

Some scholars have equated evidence on the relevance of particular diffusion channels with the operation of specific diffusion mechanisms, such as interpreting regional diffusion patterns as an indication of policy learning or socialisation. Instead of insinuating one or another mechanism, other research has attempted to explicitly model and test for the operation of diffusion mechanisms (e.g. Boehmke/Witmer 2004; Berry/Baybeck 2005; Shipan/Volden 2008). Rather than summarising research on diffusion mechanisms in its entirety, the following paragraphs present selected works that exemplify recent advances in terms of theoretical reasoning, measurement or research design.

Regarding ***learning***, recent studies have aimed at substantiating various forms of learning that policy makers might engage in, such as learning about the effectiveness of policies or their political viability. Starting from the idea that the emulation of ***successful policies*** is a clear indication of policy learning, Volden (2006), Füglister (2012a, 2012b) and Shipan and Volden (2014), have used measures of policy success, which reflect to what extent states accomplish an intended policy outcome, in order to detect if policy learning takes place. For instance, in their study on the adoption of youth access laws, Shipan and Volden (2014) use two indicators, with lower values indicating more effective policies: the non-compliance rate in tobacco test purchases (i.e. the share of minors able to buy cigarettes) and the smoking prevalence among young people. Based on the assumption that the scores that states attain on such variables are related to the policy mix that they implement, the construction of measures of policy success for each state and each year and the calculation of relative measures of success for each dyad of states provide the basis for examining if more successful policy profiles are more likely to be emulated than less successful ones.

Seljan and Weller (2011) pursue a somewhat different research interest, studying processes of direct-democratic agenda-setting as the basis for discriminating between ***learning about policy outcomes and about the political viability of policies***, respectively. They argue that proposals (initiatives, referenda and constitutional amendments) rejected at the ballot box convey information about the support for the policies voted on, but not about their effectiveness. In contrast, proposals that are passed and hence implemented entail information on both political viability and policy effectiveness. Thus, studying the effects that previous rejections of proposals in other jurisdictions – as compared to previous endorsements – have on the likelihood of proposals being made in a given state permits a better understanding of what type of information diffuses. Seljan and Weller apply this research strategy to proposals on tax- and expenditure limits made in the U.S. states between 1970 and 2006.

In recent years, scholars interested in ***competition*** as the force behind policy diffusion have started to devise more sophisticated measures of competitive pressures than previous scholarship.[22] Berry and Baybeck (2005), e.g., use geographic information systems data in measuring the size and location of populations that are of concern to decision makers in terms of state competitiveness. As regards the

[21] For a meta-analysis of the existing body of empirical research on diffusion mechanisms, see Maggetti and Gilardi (2016). The authors point to problems in construct validity, which at present compromise the findings of many studies.

[22] Scholars used to employ average benefit or tax levels among neighbouring states as a measure of competitive pressures (e.g. Berry et al. 2003; Allard 2004). They thus assumed that states compete with their direct neighbours only and that neighbouring states exert even pressures on a given state.

first policy that they study, the adoption of lotteries, the population of concern is citizens who might buy lottery tickets in neighbouring states and thus contribute to the revenues of these states (rather than the revenues of their home state). Accordingly, the authors construct a measure that reflects the number of adults who live within reach of lotteries located in neighbouring states, the distance between each person's residence and the nearest lottery in a neighbouring state (being inversely factored in) and, as the basis for standardisation, the state's total adult population. As regards welfare benefits, the second policy studied, decision makers are expected to be concerned about poor residents of neighbouring states who might relocate to the respective state if it provides higher welfare benefits than the residents' home state and other surrounding states. A variable that reflects the number of poor people in neighbouring states, the distances of their residences to the closest attractive location in the respective state, the differences in welfare benefit levels and, for the purposes of standardisation, the size of the state's own poor population is created. In explaining state lottery adoptions and the evolution of welfare benefits, Berry and Baybeck use the spatial lag variables[23] thus created both as a substitute for, and in addition to, the classic neighbour-based diffusion variable.

As another example, in his study on contextual variation in cantonal competition for high-income tax payers in Switzerland, Wasserfallen (2014) assumes competitive pressures to be negatively related to the distances between cantons (as well as positively related to the vicinity of a metropolis, see page 19). Put differently, cantonal governments are expected to consider those cantons as their strongest competitors that residents of the own canton can reach the fastest. So as to capture competitive pressures as accurately as possible, he uses data on travel times between more than 3000 locations scattered across the 26 cantons, which serve as the basis for calculating the average travel time between each pair of cantons. For each canton and each year, the current tax rates of all other cantons are weighted with the inverse of the average travel time. The resultant spatial lag variable is used to estimate the extent of interdependent decision making on personal income taxes among the Swiss cantons between 1990 and 2009.

As an example of a recent study on ***socialisation*** as a diffusion mechanism, Gilardi and Wasserfallen (2016) develop and test an argument according to which socialisation may reduce tax competition. More specifically, they argue that the regular exchange among Swiss cantonal finance ministers within regional intergovernmental organisations promotes the emergence of norms about what constitutes the limits of acceptable tax competition. As a consequence, the authors expect tax competition to be weaker among cantons that belong to the same regional association than among cantons from different regions. As a test of this hypothesis, Gilardi and Wasserfallen estimate the effects of spatial lags that reflect the membership of cantons in the same regional conference as opposed to them being members of different conferences. While the authors do not measure socialisation directly, they substantiate the diffusion mechanism presumed to be at work through information gleaned from interviews with cantonal finance ministers. Empirically, their study is based on data on taxation levels for 15 income categories between 1990 and 2007.

With regard to ***coercive pressures***, Shipan and Volden (2008) study an instance of the most explicit forms of such pressures, namely the pre-emption of policy innovation. In their article on the diffusion of local smoking restrictions and laws that restrict youth access to cigarettes, they account for the fact that some U.S. states adopt antismoking legislation that prohibits city-level governments from enacting own restrictions. The authors expect that such pre-emptive clauses lower the likelihood that large cities adopt antismoking policies.

[23] "Spatial lags" is a term from spatial econometric analysis. It captures the weighted average of the values of the dependent variable of interest (e.g. policy adoption, benefit levels) among other units (e.g. neighbouring states, states in the same region, similar states). Thus, most diffusion variables are spatial lags.

More often, scholars study the impact of somewhat milder forms of coercive pressures and focus on pressures that intend to encourage (rather than discourage) the adoption of particular policies. In the context of the U.S. states, this kind of research centres on federal grant conditions that tie state eligibility for earmarked federal funds to some particular state action. For example, in explaining the adoption of truth-in-sentencing laws by the U.S. states, Allen et al. (2004) assess the impact of a federal grant programme, which conditions the receipt of federal funding for the building and extension of correctional facilities on the requirement that states ensure that violent offenders serve no less than 85 percent of their sentences.

Thus far, this presentation of research has centred on the ***independent effects of various diffusion channels and mechanisms*** on policy innovation or on more incremental forms of policy change. Besides independent effects, scholars have recently taken an interest in ***conditional forms of interdependent decision making***. Such research does not only establish whether the previous policy choices of other governments shape policy change in a given state, but also seeks to uncover the factors that condition to what extent interdependent decision making occurs. Below, three examples of such scholarly work are provided. The first one, McCann et al. (2015), investigates into the conditional nature of vertical diffusion, i.e. a particular diffusion channel. The other two examples, Martin (2009) and Wasserfallen (2014), tackle the conditionality of competition, i.e. of a particular diffusion mechanism. In all three cases, interdependent decision making is contingent upon characteristics of the potential adopters of the policies.[24]

In their study on state-level adoptions of smoking restrictions in government buildings and in restaurants, McCann et al. (2015) analyse whether federal government attention to a policy issue increases or decreases the likelihood of state action.[25] The authors conjecture that the impact of top-down influences is contingent upon two adopter characteristics: the degree of professionalism of state legislatures and the strength of health interest groups. Specifically, the authors expect that national agenda-setting activities increase the likelihood of policy adoption for states with highly professional legislatures and strong health organisation lobbies, but decrease it for states where legislative professionalism is low and health advocates are weak.

Martin (2009) is intrigued by the stark differences in levels of cigarette taxation among the U.S. states. He starts from the observation that many U.S. states have made use, often repeatedly so, of cigarette tax increases as a means of reducing smoking and of consolidating states budgets. In explaining differences in state behaviour, he conjectures that the interplay between government ideology and tax environment accounts for different levels in taxation. Concretely, the author presumes that only left-wing governments regard cigarette taxes as an appropriate means of attaining health and fiscal goals. Moreover, since smokers are likely to purchase cigarettes in proximate states if substantial tax and thus price differences exist, Martin expects left-wing governments to pass tax increases only if the surrounding states have high cigarette taxes. Thus, competitive pressures are expected to condition the effects of government ideology (and vice versa). In an analysis of the evolution of cigarette taxes among the U.S. states between 1971 and 2006, the presumed conditional nature of interdependent policy making on cigarette taxes is tested on the basis of interaction effects that are computed for government ideology and three specifications of the diffusion variable of interest (average tax levels of neighbouring states, tax levels of neighbouring states weighted according to length of joint borders, tax level in the neighbouring state with the lowest tax level).

As hinted to above, Wasserfallen's (2014) study on personal income taxes also addresses the issue of conditionality in interdependent decision making. More specifically, the author hypothesises that subnational units are the more exposed to tax competition, the closer they are located to a metropolis.

[24] Policy diffusion could also be contingent on the characteristics of previous adopters.

[25] Shipan and Volden (2006) study the same contingent effects for the bottom-up diffusion of antismoking policies from the city to the state level.

This is presumably so because subnational units in the vicinity of large cities, which offer comprehensive educational, cultural, health and leisure-time facilities, are in a position to attract high-income tax payers if they charge lower income taxes than the close-by metropolis. Based on the assumption that this population group is both highly concerned about differences in tax rates and very mobile, subnational units with a high share of affluent residents should be particularly responsive to tax changes in surrounding units for the fear of losing this important tax base. In order to test this hypothesis, Wasserfallen creates a variable that reflects the degree to which a canton benefits from the provision of public goods by the closest metropolis. This spillover variable is derived from multiplying metropolitan spending on cultural, educational, health and leisure-time services with the inverse of the distance between the respective canton and the metropolis. In a multilevel model, Wasserfallen tests the separate effects of the spatial lag variable (see page 18) and the spillover variable as well as the interaction between the spatial lag and the spillover variables.

Before turning to the study of policy attributes in innovation and diffusion research, a final reference is warranted, namely to an article by Pacheco (2012). This is because the author provides evidence of a force behind policy diffusion that thus far has been hardly discussed in the literature. Specifically, Pacheco shows that the adoption of smoking restrictions in restaurants in a given state leads to increased public support for that policy in neighbouring states. According to her findings, it is this change in public opinion in favour of a particular policy (measured on the basis of survey data) that prompts decision makers in neighbouring states to pass the same type of policy. In her models, measures of policy learning and competition turn insignificant once a measure of public support for the policy is included. That is why Pacheco argues to have found evidence of a different mechanism of diffusion, which she calls "***social contagion***". While it is debatable whether social contagion truly constitutes a diffusion mechanism in its own right or can be subsumed under an already existing mechanism, a stronger focus on the societal forces behind diffusion mechanisms seems a promising avenue of further research.

2.3 Policy Characteristics and Types in Empirical Innovation and Diffusion Research[26]

As the preceding subchapter has shown, diffusion research has made tremendous progress since the formulation of the unified model in 1990. Compared to these advances, the study of what difference policy attributes make for the processes of policy innovation and diffusion has been given relatively little scholarly attention. Nonetheless, over the past years, a few studies have begun to disentangle the effects of particular policy attributes or configurations of policy attributes (i.e. policy types) on innovation and diffusion. Below, the findings of each study are detailed.

Mooney and Lee (1995) study what difference it makes for innovation and diffusion if the issue that the policy deals with is a moral rather than an economic one. Defining ***morality policies*** as all those policies that regulate social norms or that for other reasons provoke strong moral reactions, they highlight the larger potential for political conflict inherent in such policies. Morality policies, they point out, elicit debates on first principles, on right and wrong, virtue and sin, and thus do not lend themselves to compromise, whereas some middle ground can more easily be achieved when economic interests are at stake. Moreover, morality issues tend to be highly salient and low in technical complexity. Mooney and Lee argue that morality policies should produce patterns of policy adoption among the American states that are clearly distinct from those of other policies, provided that Lowi is right in that policy determines politics.[27] As a test of this supposition, they study various aspects of policy innovation and diffusion for one particular morality policy, i.e. abortion regulation reforms. Using a single-innovation design, the authors contrast their findings with the evidence of previous diffusion research on economic policies so as to be able to answer their research question. They find

[26] This subchapter concentrates on research that systemically tests for the effects of policy attributes on innovation and diffusion, whether in subnational or national policy making.
[27] This refers to Lowi's work on policy typologies (Lowi 1964, 1972).

that with regard to most aspects of policy diffusion, including the geographical clustering of policy adoptions, the speed of diffusion and the expansion of the scope of the policy in the course of diffusion, abortion regulation behaves exactly as other policies do. However, the authors discover that the morality policy studied does not diffuse as widely as economic policies tend to do, translating into a truncation of the cumulative S-curve. Furthermore, they observe that the nature of internal determinants that influence state policy adoptions might differ in morality politics. At least with regard to abortion regulation, public opinion, interest group strength and electoral security hold decisive sway over policy adoption, whereas socio-economic variables prove inconsequential.[28]

Brooks (2007) focuses on policy characteristics with a view to determining the relative importance of diffusion effects for domestic policy choices. Taking structural pension reforms as the empirical basis, she contrasts the spreading of two different reform options that aim at mitigating the increase in pension expenditure associated with demographic ageing. Both types of reforms rely on the defined-contribution principle, stipulating a fixed amount of pension contributions that workers have to pay into individual retirement accounts. Thus, both alternatives do away with the defined-benefit logic of classic social insurance pension schemes and shift income and longevity risks from the state to the individual insured. The first type of structural pension reform, the funded defined-contribution (FDC) model, entrusts private pension funds with the management of pension accounts. With the FDC-model being fully funded, the level of pension benefits is entirely determined by the sum of individual savings and the return on the investment of these savings in the financial market. In the notional defined-contribution (NDC) model, the second type of structural pension reform, individual pension accounts are also established. However, the state is in charge of administration of these accounts, defines the interest rate that is applied to pension savings and finances pension benefits on a pay-as-you-go basis. Brooks argues that the two reform options differ significantly with regard to ***sunk costs***. For various reasons, FDC-reforms are associated with high political and financial costs and are almost impossible to reverse: Pension privatisation is a highly visible type of reform and tends to evoke strong political protest from those to lose from the reform; the shift to individual pension accounts generates a funding gap for existing pension benefits as contributors no longer pay into the old scheme; and the establishment of private retirement accounts creates new stakeholders (i.e. the managers of private pension funds and the owners of pension accounts), making a later reversal of the reform highly costly in political terms. NDC-reforms, Brooks explicates, also involve considerable political and financial costs, but much less so than FDC-reforms. With the pension scheme remaining under state control, the cost-saving nature of these reforms is far less visible and policy makers are in a position to adjust the scheme if required for defusing political conflict. Brooks' central hypothesis is that the higher the sunk costs associated with adopting a particular policy, the more importantly previous policy choices by other governments feature in domestic decision making. Accordingly, she expects prior policy adoptions to weigh more heavily in decisions to introduce FDC- than NDC-reforms. She tests this supposition based on a sample of 71 countries, using a competing risks model for the adoption of either FDC- or NDC-pension reforms and including the proportion of peers that have adopted the respective reform previously as her main explanatory variable. Peers are defined in socio-cultural terms, with Latin America, Spain and Portugal building one reference group, the post-communist Eastern and Central European countries another one, and all remaining OECD countries a third group. Brooks' findings reveal that, overall, peer effects are no more important in FDC- than in NDC-reforms. However, she finds evidence of conditional diffusion effects: Lower-income countries as well as Latin American and Eastern European countries indeed pay attention to the prior policy choices of their peers when adopting FDC-reforms, while there are no such diffusion effects for NDC-reforms.

[28] Many other diffusion studies focus on social regulatory policies, such as living will laws (Glick/Hays 1991), death penalty legislation (Mooney/Lee 2000), statutory rape age span laws (Cocca 2002), same-sex marriage bans (Haider-Markel 2001), gay and transgender anti-discrimination laws (Taylor et al. 2012), embryonic stem cell research (Karch 2012) or three-strikes laws (Karch/Cravens 2014). However, these studies pursue other research interests than comparing morality to non-morality policies.

Nicholson-Crotty (2009) observes two different temporal patterns of policy diffusion – the gradual spreading of policies that manifests in the familiar S-shaped cumulative frequency function and a "plateau pattern" produced by policies that spread rapidly at first, before quickly levelling off. He conjectures that the first pattern may well reflect policy learning, whereas the latter is more likely to result from a situation where policy makers forego policy learning for the benefit of short-term electoral gains, which require rapid action rather than the careful analysis of policy effects.

Given this distinction, Nicholson-Crotty seeks to spell out for which policies learning matters. In drawing on Gormley's (1986) work on regulatory policy making, he identifies ***salience*** and ***technical complexity*** as the policy attributes that condition the nature of policy making and hence the speed of diffusion. He suggests that high-salience policies prompt decision makers to take rapid action, thus diminishing the importance of learning and producing a pattern of rapid diffusion. In contrast, he expects learning to feature the more strongly in adoption decisions, the more technically complex a policy is. Technical complexity thus causes policy diffusion to slow down. In terms of specification and measurement, Nicholson-Crotty defines salient policies as policies that many citizens know and care about, using the number of articles on the policy or the relevant issue area that are published each year in the New York Times as an indicator. Complexity, in turn, is conceptualised in terms of the need for technical expertise in linking solutions to policy problems. As an operational definition, he uses a dichotomous variable that is coded 1 if the policy pertains to the regulation of energy, the environment, healthcare, taxation or finances and 0 otherwise. A secondary analysis of 57 previously studied policies supports his expectations about the relationship between salience and technical complexity and the rates at which policies diffuse.

Boushey (2010: 62-91) is similarly intrigued by the sharp variations in diffusion dynamics among policies. Like Nicholson-Crotty, he associates patterns of gradual diffusion with policy learning. In accounting for instances of policy diffusion that clearly diverge from this pattern, Boushey refers to the insights of policy equilibrium theory, which emphasises that surges in public attention devoted to some policy problem and the ensuing move of the issue from the confines of the relevant political subsystem onto the agenda of the broader political system cause policy outbreaks. Such outbreaks produce patterns of discontinuous and rapid policy diffusion, he argues. Concerning the effects of policy attributes on the dynamics of policy diffusion, Boushey postulates that five attributes impact on the pattern and rate of diffusion: ***issue complexity***, ***salience***, ***fragility***,[29] ***type of target group*** and ***programme costs***.

Specifically, he expects complex policies, costly policies and policies associated with high issue fragility to diffuse slowly and salient policies to spread rapidly. Instead of analysing the effects of the five attributes separately, he classifies the 72 policies studied into three groups, which represent different configurations of these attributes. ***Economic, environmental and professional regulatory policies***, which constitute the first category, combine a low level of salience, a high degree of complexity, high implementation costs and a high level of issue fragility. According to Boushey, the diffusion of these policies should quite closely match an S-shaped cumulative normal curve, taken as indicative of gradual policy learning. ***Social regulatory (i.e. morality) policies***, in contrast, are characterised by low technical complexity and high issue salience. Boushey argues that this combination of policy attributes should accelerate policy diffusion. Similarly, ***governance policies***, i.e. policies that modify the functioning of the political system, are presumed to be highly salient and relatively simple. Since governance policies usually spread through direct-democratic institutions and incite mass citizen participation in policy making, he suspects that governance policies spread even faster than social regulatory policies.[30] As a

[29] "Issue fragility" denotes the level of organised resistance by societal groups that a policy provokes (Savage 1985: 117).

[30] Boushey also expects the number of adopters of social regulatory and governance policies to be more limited than that of other regulatory policies. In the case of morality policies, the conflict over moral values is likely to limit the total number of adopters. For governance policies, the ceiling effect may arise from the importance of

way of testing for the impact of target groups and the associated levels of issue fragility, Boushey distinguishes two further subsamples of policies: ***child protection policies*** and ***professional licencing policies***. Due to their high salience and the lack of organised opposition, child protection policies are selected as prime candidates for swift diffusion. Licencing policies, which tend to be complex, low in salience and unpopular with the groups regulated, should diffuse incrementally only.

In his analyses, he compares the aggregate diffusion curves of each class of policies with a simulated normal distribution curve of the same mean and variance. In line with his hypotheses, Boushey finds that governance policies deviate the most strongly from the simulated curve and exhibit the fastest pace of diffusion, closely followed by social regulatory policies. Economic, professional and environmental regulatory policies are found to spread more slowly than policies in the other two categories, but they deviate from the simulated curve more strongly than expected, exhibiting a faster than expected take-up pattern early in the diffusion process. The rapid take-up of children's policies and the slow spreading of licencing policies attest to the relevance of the type of target group and issue fragility, with licencing policies closely following the simulated cumulative distribution function.

Finally, Makse and Volden (2011) assess the impact of policy attributes on the likelihood of adoption. More specifically, they use the typology of innovation attributes that Rogers (2003) devised in his eminent study on the diffusion of innovations, i.e. ***relative advantage***, ***complexity***, ***compatibility***, ***observability*** and ***trialability***. For the purposes of exploring the impact of these generic attributes on innovation choices in criminal justice policy making, Makse and Volden define relative advantage as the extent to which policy makers perceive a policy as enhancing the effectiveness of the criminal justice system. Complexity is specified as a function of the degree to which the goals and likely outcomes of a particular policy are clear to policy makers at the time of considering its adoption and the level of difficulty associated with translating the policy idea into legislation. Compatibility captures the extent to which the passage of the specific policy requires changes in other areas of state legislation. Observability is defined as the extent to which legislators in neighbouring states can observe the results of the policy, while trialability reflects the degree to which decision makers might regard policy implementation on a trial basis as useful.

In order to measure these attributes, the authors carried out a survey among criminal justice experts and asked respondents to rate the policies on each of the above dimensions on a five-point scale. For the analyses, they dichotomise the attributes, though. Following Rogers, Makse and Volden expect relative advantage, observability, compatibility and trialability to be positively associated with the likelihood of policy adoption and complexity to be negatively related to it (which is, in the authors' terms, the "policy attributes hypothesis"). Moreover, Makse and Volden conjecture that some of the policy attributes enhance diffusion. They expect policies with a high level of relative advantage, compatibility and observability to encourage neighbour-based diffusion ("enhanced spatial diffusion hypothesis") and policy learning ("enhanced learning hypothesis"). For complexity and trialability, they expect the opposite effects, i.e. they hypothesise that high levels of complexity and of trialability diminish the relevance of neighbour-based diffusion ("diminished spatial diffusion hypothesis") and of learning as a diffusion mechanism ("diminished learning hypothesis"). In testing these hypotheses, the authors estimate event history models on pooled data on the adoption of 27 criminal justice policies for the period from 1973 to 2002, with policy-state-years constituting the observations (see Chapter 6.1). So as to assess the hypotheses on the conditional nature of neighbour-based diffusion and policy learning, Makse and Volden use a split-sample method that contrasts policies with low and high values on each of the attributes. Their results confirm the policy attributes hypothesis, but are mixed as regards the conditional hypotheses.

direct-democratic channels of diffusion, since not all U.S. states have direct democracy. He does not test these suppositions, though.

In summary, we find that existing studies shed light on the effects that policy attributes have on various phenomena, including the ***speed of diffusion*** (Mooney/Lee 1995; Nicholson-Crotty 2009; Boushey 2010), the nature of ***policy reinvention*** (Mooney/Lee 1995), the ***internal determinants*** that drive policy adoption (Mooney/Lee 1995), the ***weight of particular diffusion effects*** (Brooks 2007; Makse/Volden 2011) and the ***likelihood of policy adoption*** (Makse/Volden 2011). In terms of study designs, Mooney and Lee (1995) examine a single policy innovation, Brooks (2007) looks at two variants of a particular innovation, while Nicholson-Crotty (2009), Boushey (2010) and Makse and Volden (2011) use multiple-innovations designs, examining between 27 and 72 policies. Furthermore, the studies conceptualise policy characteristics somewhat differently. Some focus on ***distinct policy attributes***, others on ***policy types***, which embody certain configurations of attributes. Thus, sunk costs (Brooks 2007), relative advantage, complexity, compatibility, observability and trialability (Makse/Volden 2011) and salience and complexity (Nicholson-Crotty 2009) represent distinct attributes, while the distinction between morality and other policies (Mooney/Lee 1995) and the classification into social regulatory, governance and state regulatory policies (Boushey 2010) capture policy types. Moreover, some scholars frame policy characteristics in terms of the ***issue that a policy addresses***, others in terms of the ***solution that it entails***. The works by Mooney and Lee (1995) and Nicholson-Crotty (2009) exemplify the first conception; the studies by Brooks (2007) and Makse and Volden (2011) are based on the second understanding. Boushey (2010) combines the two conceptions.

2.4 Tobacco Control Policies: What Insights from Policy Innovation and Diffusion Research?[31]

Synopsis

Based on a search in literature databases, eight studies were identified that look at the adoption and diffusion of tobacco control policies. Table 1 provides a short synopsis of these works, outlining the research interest behind each study, the policies analysed and the research designs used. As becomes evident from Table 1, most studies use antismoking policies as the empirical basis for pursuing a more general theoretical research interest. Thus, Shipan and Volden (2006) are concerned with the nature of bottom-up processes of policy diffusion, whereas McCann et al. (2015) are driven by an interest in the impact of federal policy debates on state policy making, i.e. in top-down influences. Shipan and Volden (2008) aim at demonstrating ways of disentangling different diffusion mechanisms in empirical research. In later work, Shipan and Volden (2014) seek to shed light on the conditional nature of one particular diffusion mechanism, examining how learning from successful policies in other states is contingent upon political and policy expertise. Pacheco's (2012) motivation for the analysis of antismoking policies is to substantiate a mechanism of diffusion different from those discussed in the literature, which she calls "social contagion" (see page 20). Pacheco and Boushey's joint article (2014) is concerned with assessing the relative importance of various intergovernmental influences for state agenda-setting. Two of the studies reflect first and foremost a substantive interest in tobacco control policies, though: Studlar et al.'s (2011) analysis of the determinants of the comprehensiveness of the tobacco control policies that exist in the EU-15-member states and Toshkov's study (2013) on the timing and strictness of smoking restrictions in bars and restaurants in a larger number of European countries.

Table 1 also shows that almost all studies examine one or a small number of related antismoking policies. Studlar et al.'s (2011) contribution on the comprehensiveness of tobacco control policy is an exception, being based on 16 policies from three areas – advertising, promotion and sponsorship restrictions; smoking restrictions in public places; and public education measures. Shipan and Volden's

[31] This section reviews quantitative diffusion studies on antismoking policies, with the exception of cigarette taxation (e.g. Fredriksson/Mamun 2008; Martin 2009; Esteller-Moré/Rizzo 2014; Golden et al. 2014).

(2014) analysis of youth access laws constitutes a special case inasmuch as the authors use particularly fine-grained data on the components of such laws.

Among the various types of tobacco control policies, smoking restrictions in restaurants receive the widest empirical scrutiny, followed by youth access laws and smoking restrictions in government buildings. While Studlar et al.'s (2011) index covers restrictions on advertising, promotion and sponsorship as well as public education measures, these policies do not seem to have been the subject of single-policy studies.

Regarding the jurisdictions studied, the lion's share of research work centres on the U.S. states. One study analyses local policy making in the U.S. and two studies focus on policies adopted by European countries.

In terms of the dependent variables studied, four of the research contributions seek to explain policy adoption. Toshkov (2013) uses the date of policy enactment rather than the date of adoption. Shipan and Volden (2014) look at policy emulation, i.e. at whether and to what degree state youth access laws become more similar (see Chapter 2.2). Being interested in agenda setting, Pacheco and Boushey (2014) use the number of tobacco-related bill introductions as the dependent variable. Studlar et al. (2011), in turn, model the comprehensiveness of tobacco control policy, based on a scale that ranges from 0 to 34. The scale is constructed by way of counting the weighted number of antismoking policies that are in force in the respective country. Specifically, each restriction on tobacco advertising, promotion, sponsorship as well as smoking is weighted with 1, while each ban on these activities is weighted with 2. Public education measures are mostly coded 2 if present and 0 if absent. Besides policy enactment, Toshkov (2013) studies policy stringency, characterising smoking bans in bars and restaurants as either non-existent, lax, partial or full.

What can we learn from these studies on the determinants of the adoption, enactment, emulation and comprehensiveness of, and the level of parliamentary decision-making on, tobacco control policies? In the following sections, the most relevant findings are reported.

Table 1: Policy innovation and diffusion research on tobacco control policies

Study	*Research interest*	*Policies studied*	*Dependent variable(s), units of analysis, observation period, method of analysis*
Shipan and Volden (2006)	Bottom-up diffusion from local to state level – "snowball effect" or "pressure valve effect"?	▪ Smoking restrictions in government buildings ▪ Smoking restrictions in restaurants ▪ Out-of-pack sales restrictions	▪ Policy adoption ▪ U.S. states ▪ 1975-2000 ▪ Monadic event history analysis
Shipan and Volden (2008)	Testing various mechanisms of policy diffusion – learning, competition among near cities, imitation of larger cities, coercion by state government	▪ Smoking restrictions in government buildings ▪ Smoking restrictions in restaurants ▪ Youth access laws	▪ Policy adoption ▪ Large U.S. cities ▪ 1975-2000 ▪ Monadic event history analysis
Studlar et al. (2011)	Impact of different sets of explanatory variables (socioeconomic modernisation, interest group structures, institutional structures, government ideology, vertical EU-member-state diffusion) on comprehensiveness of tobacco control policy	▪ Six advertising, promotion and sponsorship restrictions: print advertising, television advertising, sponsorship, point-of-sale advertising, minimum age for purchase, minimum pack size ▪ Five smoking restrictions in public places: airlines, workplaces, government facilities, restaurants, bars ▪ Five public education measures: major government reports, strategic plan, health warning labels, media campaign, cessation services	▪ Policy comprehensiveness ▪ EU-15-member states ▪ 1986-2007 ▪ Pooled cross-sectional time-series analysis
Pacheco (2012)	Interdependence of public support for policy as an alternative force behind diffusion among neighbouring states	▪ Smoking restrictions in restaurants	▪ Policy adoption ▪ U.S. states ▪ 1990-2007 ▪ Monadic event history analysis
Toshkov (2013)	Determinants of timing of enactment and strictness of smoking restrictions, in particular impact of various measures of government ideology	▪ Smoking restrictions in bars and restaurants	▪ Policy enactment; policy strictness ▪ 29 European countries ▪ 2003-2011 ▪ Monadic event history analysis; cross-sectional analysis

Table 1: Policy innovation and diffusion research on tobacco control policies (continued)

Study	*Research interest*	*Policies studied*	*Dependent variable(s), units of analysis, observation period, method of analysis*
Shipan and Volden (2014)	Learning from policy success – contingency of learning on political expertise (legislative professionalism) and policy expertise (local policy experimentation)	▪ 16 components of youth access laws: age requirements, youth penalties, free distribution restrictions, vending machine restrictions, out-of-pack sales restrictions, ID requirements, sign-posting requirements, vendor licencing requirements, vendor penalties, location restrictions, education and awareness activities, behind-the-counter sales requirements, delivery and shipping restrictions, task force authorisation, random inspections, bidi restrictions	▪ Policy emulation; degree of policy emulation ▪ U.S. states ▪ 1992/1997-2002 ▪ Dyadic event history analysis
Pacheco and Boushey (2014)	Determinants of state-level agenda setting in public health (tobacco and vaccines), in particular impact of intergovernmental influences (federal, neighbour-based and gubernatorial agenda-setting activities)	▪ Tobacco and health legislation ▪ (Vaccine regulations)	▪ Bill introduction ▪ U.S. states ▪ 1990-2010 ▪ Event count analysis
McCann et al. (2015)	Effect of federal-level agenda-setting activities on state-level policy adoptions – contingency of top-down influences on legislative professionalism and health advocacy	▪ Smoking restrictions in government buildings ▪ Smoking restrictions in restaurants	▪ Policy adoption ▪ U.S. states ▪ 1975-2000 ▪ Monadic event history analysis

Internal determinants

Regarding the influence of internal determinants, the explanatory factors examined may be divided into the following seven categories: ***problem severity***, ***government ideology***, ***citizen ideology***, ***policy making capacity***, ***producer pressures***, ***interest-group pressures*** and ***public support for the policy***.[32]

To begin with, diffusion scholars hypothesise that states are the more likely to debate and adopt antismoking policies, the more severe ***related public health problems*** are. In testing this supposition, existing studies look at three indicators: percentage of smokers, smoking-attributable mortality rate and proportion of government expenditure spent on health. The first variable focuses on the prevalence of the behaviour that is harmful to health, while the second variable reflects the most severe health outcome associated with that behaviour.[33] The third indicator reflects a different conceptualisation of problems in health policy, referring to the burden of financing public healthcare systems. High levels of health spending may spur the adoption of cost-saving policies. The prevention of tobacco-related diseases possibly contributes to the containment of health spending. As regards the prevalence of smoking, Pacheco and Boushey (2014) find a positive impact on the number of tobacco-related bills introduced in U.S. state parliaments. The estimated effects of the other two variables, i.e. smoking-related deaths and health spending, on agenda-setting and policy adoption are either inconsistent across models or studies, insignificant or even run counter to expectation. All in all, the evidence on the impact of problem severity is inconclusive – we do not know to what extent smoking-related health problems or cost-induced pressures motivate the adoption of tobacco control policies.

Regarding ***ideological preferences***, leftist governments are expected to be more likely to table and to adopt antismoking policies and consequently to have more comprehensive tobacco control policy regimes. For the purpose of assessing the impact of ideological preferences, both ratings of the ideological positions of the members of governments and parliaments by experts and measures that reflect the partisan composition of state institutions are used. In the U.S. context, several studies find government liberalism, as rated by interest-group representatives, to encourage the adoption of tobacco control policies. In contrast, the partisan composition of state institutions, which measures such as “Unified Democrats”, “Unified Republicans” or “Democratic strength” capture, appears to have little explanatory power. Out-of-pack sales restrictions are an exception to this pattern: They turn out to be less likely to be adopted by unified Republican governments, while the rating-based measure of government ideology does not reach significance (Shipan/Volden 2006).

In European policy making, Toshkov (2013) finds no effect of government ideology on the likelihood that the EU-15-member states enact smoking restrictions in bars and restaurants, irrespective of whether the ideological orientations of cabinets are measured on an economic left-to-right, a social liberal-to-authoritarian or a pro-to-anti EU continuum. Similarly, according to Studlar et al. (2011), countries with leftist governments have no more comprehensive tobacco control policies than those with rightist governments. Shipan and Volden (2008) use per capita government spending as a proxy for the liberalism of local governments. In their model on learning, the variable exhibits a significant positive effect on the adoption of the three antismoking policies studied, but in the models on competition, imitation and coercion it is insignificant.

In sum, findings differ across jurisdictions – liberal U.S. state governments seem to be more likely to adopt antismoking restrictions than their conservative counterparts, while such differences are not observed for European countries or U.S. cities. It is also somewhat puzzling that government ideology is found to affect policy adoption (Shipan/Volden 2006; McCann et al. 2015), but not agenda-setting in the U.S. states (Pacheco/Boushey 2014). At present, it is not clear to what degree these differences

[32] Citizen ideology is not discussed below since it is addressed by two studies only.

[33] Since smokers are assumed to be opposed to tobacco regulation, the percentage of smokers may also serve as a proxy measure of the degree of popular opposition to antismoking policies. That is what most scholars use the variable for (see page 32).

in findings are due to actual variations in the importance of government ideology across jurisdictions, policies and stages of the policy process as opposed to differences in measurement and model specification.

Further, strong ***policy-making capacities*** of the legislative and executive branches of government are conjectured to enhance the introduction, adoption, emulation and scope of antismoking policies. As a measure of the capacities of state legislatures, scholars use an index of legislative professionalism that captures three dimensions: session length, staff resources and compensation of legislators.[34] Executive policy-making capacities are measured through a number of proxy variables: Studlar et al. (2011) and Pacheco and Boushey (2014) use the percentage of the gross domestic product (GDP) spent on health and per-capita health expenditure respectively as proxies for the resources of health administrations, while Shipan and Volden (2008) draw on city size and a dummy for mayor-council forms of government as proxies for local policy-making capacities.

The results on the impact of legislative professionalism are variegated: Pacheco and Boushey (2014) find that more professional state legislatures introduce more tobacco-related bills. Other research shows that legislative professionalism by itself does not affect policy adoption (Shipan/Volden 2006; McCann et al. 2015) or even lowers the probability of policy emulation (Shipan/Volden 2014). At the same time, legislative professionalism is found to condition certain diffusion effects. Thus, Shipan and Volden (2006) observe the impact of local-level smoking restrictions in government buildings and restaurants on state legislation to be contingent upon the professionalism of state legislatures. In states with professional parliaments, a "snowball effect" materialises, i.e. local policy making encourages policy adoption at the state level. In contrast, states that have parliaments with a low degree of professionalism experience a "pressure-valve effect", i.e. local adoptions of smoking restrictions in public places decrease the likelihood of state governments engaging in such legislation. Moreover, state legislatures are found to be the more likely to learn from successful states (Shipan/ Volden 2014) and to respond to national policy debates with own legislation (McCann et al. 2015), the more professional they are.

Regarding the proxy measures of policy-making capacities, Shipan and Volden (2008) observe, as expected, a negative impact of mayor-council forms of government and a positive effect of city size. Health expenditure turns out to be positively associated with the comprehensiveness of European anti-tobacco policies (Studlar et al. 2011), but to be unrelated to the number of tobacco-related bills introduced (Pacheco/Boushey 2014).

Altogether, the findings suggest that policy-making capacities, in particular the degree of legislative professionalism, shape the introduction, adoption, emulation and comprehensiveness of antismoking policies – directly and/or indirectly through the enhancement of policy diffusion.

With regard to ***producer pressures***, the authors of most studies speculate that the tobacco industry is capable of mounting opposition to antismoking policies, rendering the introduction of bills or policy adoption less likely and tobacco regulation less comprehensive. Scholars use both dummy variables and continuous indicators of tobacco production and manufacturing. Studlar et al. (2011) presume that policy makers are more concerned about protecting the economic interests of the domestic tobacco industry than of international tobacco companies, which have their headquarters elsewhere, and thus specify the variables in terms of domestic tobacco production and manufacturing.

The research findings on the impact of tobacco production turn out to be inconsistent across studies: The number of tobacco-related bill introductions is unaffected by whether or not the respective state produces tobacco (Pacheco/Boushey 2014). Concerning policy adoption, Shipan and Volden (2006) find that tobacco-producing states are less likely to pass smoking restrictions in government buildings

[34] All scholars rely on the legislative professionalism index devised by Squire (1992, 2007).

and restaurants as well as out-of-pack sales restrictions. McCann et al. (2015) find the same effect for restaurant restrictions, but not for government building restrictions.[35] Yet, according to Pacheco (2012), tobacco production does not decrease the likelihood that smoking restrictions in restaurants are adopted. In the European context, Toshkov (2013) observes that tobacco-producing countries are less likely to enact smoking restrictions in bars and restaurants. In Studlar et al.'s (2011) analysis, domestic tobacco production does not impact on the comprehensiveness of tobacco control policies, while tobacco manufacturing is even positively associated with the latter. Shipan and Volden's (2008) findings on local policy adoptions differ by model specification. All in all, the findings across studies are not conclusive – tobacco production might or might not shape decision-making on antismoking policies.

In terms of ***pressures of interest groups*** that fight for or against antismoking legislation, research generally focuses on two groups – health lobbies and tobacco lobbies. In doing so, scholars capture two aspects of interest group strength – the numeric strength of health and tobacco lobbyists (measured as the share of registered lobbyists who work for health organisations or for the tobacco industry respectively) and the perceived influence of these groups (measured on an ordinal scale, i.e. lobby listed by politicians and political observers as belonging to the ten most influential interest groups, the 20 most influential groups or otherwise).

With regard to the impact of health organisation strength, the studies yield diverging results: Shipan and Volden (2006) find that health organisation strength does not affect the adoption of smoking restrictions in government buildings, but is positively related to the passage of smoking restrictions in restaurants and of out-of-pack sales restrictions. McCann et al. (2015) confirm the positive impact on the passage of smoking restrictions in restaurants. Further, in most models, they also find evidence of government building restrictions being more likely to be adopted by states that have influential health lobbies. In contrast, Pacheco (2012) detects no such impact on the adoption of smoking bans in restaurants.

Apart from the independent effects of health organisations, scholars have also studied how their strength patterns various diffusion effects. Thus, Shipan and Volden (2006) explore whether or not the impact of bottom-up diffusion from the local to the state level is contingent upon the influence of health lobbyists. In the case of out-of-pack sales restrictions, such a conditional effect exists – in states where health advocates are relatively weak, local policy adoptions render state action less likely ("pressure-valve effects"). In contrast, states with strong health advocates experience a "snowball effect", i.e. local policy adoptions prompt the state level to legislate itself on out-of-pack sales. Further, McCann et al. (2015) test whether or not top-down policy diffusion is contingent upon the number of health organisation lobbyists. According to their findings, compared to states with few health advocates, states with numerous lobbyists are more likely to be encouraged by national policy debates to adopt smoking restrictions in restaurants.

Regarding the relevance of tobacco lobbies, there is almost uniform evidence that neither the number nor the influence of tobacco lobbyists shape the adoption of antismoking policies – with one exception: Shipan and Volden (2006) find states with strong tobacco lobbies to be less likely to pass smoking restrictions in government buildings.[36]

[35] Shipan and Volden (2006) and McCann et al. (2015) simultaneously test for the effects of tobacco production (based on a dummy variable) and the level of tobacco production. In both studies, only the dummy variable reaches statistical significance.

[36] Contrary to what would be expected, Shipan and Volden (2008) observe the strength of health advocates at the *state level* to decrease, and government conservatism and the strength of tobacco lobbyists at the *state level* to increase, the likelihood of *local* policy adoptions. They speculate that this pattern might result from venue-shopping by health organisations. According to this interpretation, proponents of antismoking policies who face

If we turn to agenda-setting, Pacheco and Boushey (2014) conclude that neither health nor tobacco interest groups influence the number of tobacco-related bills introduced. Finally, Studlar et al. (2011) detect a negative association between the comprehensiveness of tobacco control policy and the existence of corporatist interest group systems in the EU-15-member states.

In all, health organisations seem to encourage the adoption of antismoking policies – directly and/or indirectly through the enhancement of policy diffusion. The strength of tobacco lobbyists – beyond the impact of producer pressures – does not appear to make much difference for policy making on tobacco control policies.

Finally, scholars expect states to be the more likely to adopt or extend tobacco control policies, the more supportive the general public is of such policies. In assessing the influence of ***citizen pressures***, only few studies draw on public opinion data, which directly measure policy support. Most research is based on proxy variables of various kinds, such as the percentage of smokers (who are assumed to be opposed to tobacco legislation) or socio-economic characteristics, such as education, income or ethnicity.

Based on public opinion data, Pacheco (2012) and Toshkov (2013) find strong evidence of the relevance of public support: In both studies, smoking restrictions in restaurants are the more likely to be adopted, the higher the share of citizens who favour such restrictions. In contrast, the findings on the impact of the share of smokers are inconclusive: Results include significant negative effects on the adoption of out-of-pack sales restrictions (Shipan/Volden 2006), on the passage of local smoking restrictions and local youth access laws (Shipan/Volden 2008) and on the comprehensiveness of tobacco policy (Studlar et al. 2011). Other findings, however, indicate that the percentage of smokers makes no difference for the adoption of smoking restrictions in restaurants and in government buildings (Shipan/Volden 2006; Pacheco 2012; Toshkov 2013; McCann et al. 2015).

All in all, studies that use public opinion data suggest that the level of public support might shape policy making on antismoking policies. Given that the two studies focus on smoking restrictions in restaurants exclusively, it would be premature to generalise these results, though. The contradictory findings on the most commonly used proxy variable, i.e. the share of smokers, is probably due to the fact that the measure taps into problem severity as well.

Diffusion effects

As diffusion effects are concerned, we find that research on tobacco control policies addresses the entire spectrum of channels and mechanisms, frequently investigating into both the independent effects and the conditional nature of policy diffusion. Thus, findings on ***neighbour-based***, ***top-down***, ***bottom-up*** and ***isomorphic diffusion*** as well as on ***learning***, ***competition***, ***imitation*** and ***coercion*** exist, the most important of which are described below.

Neighbouring states that have previously adopted the same restriction are found to enhance the adoption of smoking restrictions in government buildings (Shipan/Volden 2006) and in restaurants (Shipan/Volden 2006; McCann et al. 2015) as well as the adoption of out-of-pack sales restrictions (Shipan/Volden 2006). Further, Pacheco and Boushey (2014) observe that the level of attention that state legislatures devote to tobacco as a public health issue is positively related to similar agenda-setting activities in neighbouring states. Shipan and Volden (2014), however, do not observe states to be more likely to emulate the policy design of neighbouring states than of other states.

Reflecting differences in policy-making contexts and in research interests among scholars, a range of ***top-down influences*** are examined across studies. Shipan and Volden (2006) study the passage of the

strong resistance at the state level, concentrate their endeavours on having such legislation adopted at the local level (Shipan/Volden 2008: 851).

Synar Amendment, which is a federal mandate that requires the U.S. states to ensure that minors cannot purchase cigarettes. States that do not comply with the amendment risk losing federal funds for the prevention and treatment of substance abuse. Shipan and Volden (2006) observe that the Synar Amendment encourages the adoption of out-of-pack sales restrictions, but has no impact on the passage of smoking restrictions in public places. Since out-of-pack sales restrictions aim at preventing youth access to tobacco, this finding makes intuitively sense.

Two studies examine the effects of federal tobacco and health agenda-setting. Pacheco and Boushey (2014) find no evidence that the number of Congressional hearings influences state agenda-setting activities. McCann et al. (2015) find no independent effects of national policy debates either; their lagged federal activities variable does not reach statistical significance.[37] Nonetheless, they observe that national agenda-setting shapes state policy adoptions – in states with professional parliaments and strong health organisations. Regarding top-down influences in the EU, directives and recommendations are found to contribute to the comprehensiveness of tobacco regulation regimes (Studlar et al. 2011).

None of the three studies that test for ***bottom-up diffusion*** finds that local policy adoptions overall shape the likelihood of state-level adoptions (Shipan/Volden 2006; Shipan/Volden 2014; McCann et al. 2015). However, as reported before, Shipan and Volden (2006) observe bottom-up diffusion to be relevant once legislative professionalism and health organisation strength are taken into account.[38] With regard to smoking restrictions in restaurants, Pacheco's (2012) findings do not yield a significant interaction effect between bottom-up diffusion and legislative professionalism, though.

Thus, as diffusion channels are concerned, evidence from existing research suggests neighbour-based diffusion to be positively associated with the adoption of antismoking policies. Concerning the effects of neighbour-based diffusion on agenda-setting, the effects of top-down diffusion on policy adoption and policy comprehensiveness and the conditional effects of top-down diffusion on policy adoption, researchers also report positive findings. Thus far, each of these aspects has been examined in no more than a single study, though. The findings on the impact of bottom-up diffusion are inconclusive for the time being.

Existing studies on tobacco control policies follow two approaches in analysing ***policy learning***: The first one specifies policy learning in terms of learning opportunities. It is based on the assumption that the higher the number of previous adopters or the larger the share of the population that lives in localities that have already adopted the policy, the more opportunities arise for potential adopters to learn from previous policy adoptions. According to this line of reasoning, a significant positive effect of these diffusion variables indicates policy learning. Shipan and Volden (2008), who suggest this approach, find that cities learn from previous adoptions and that larger cities are more likely than smaller cities to do so. Pacheco (2012) adopts the same logic. She observes, however, that policy learning becomes insignificant once models control for public opinion in favour of the policy, which she considers as proof of her social contagion argument.

The second approach conceives of learning as entailing the adoption of successful policies. Thus, in their analysis of state youth access laws, Shipan and Volden (2014) examine if states are particularly likely to emulate the policy designs of such states that are more successful in restricting minors' access to cigarettes and in limiting the prevalence of smoking among high school students. The authors find evidence of policy learning. Further, they observe that, compared to states with lower levels of professional and policy expertise, states with more professional legislatures and with more experience

[37] "Current federal activities", which records Congressional hearings and bills in the same year, is significant, though. McCann et al. (2015) interpret this finding as indicating that federal and state governments respond to the same pressures (McCann et al. 2015: 13-14).

[38] Shipan and Volden (2014), who use local adoptions as a measure of policy expertise, similarly find that bottom-up diffusion enhances policy learning.

with youth access restrictions at the local level are more likely to learn from successful states. Put differently, policy and political expertise are found to enhance policy learning.

Two studies focus on ***competition***, using similar specifications of the diffusion variable. With regard to local policy adoptions of smoking restrictions in public places and of out-of-pack sales restrictions, Shipan and Volden (2008) capture competitive pressures through a variable that reflects the ratio of the total population of surrounding cities that do not have the respective restriction to the home population. Similarly, Pacheco (2012) uses the proportion of the population of neighbouring states that is not covered by smoking restrictions in restaurants. Shipan and Volden (2008) observe that competitive pressures prompt the adoption of the three antismoking policies and that smaller cities are more exposed to such pressures. Pacheco (2012), in contrast, demonstrates that competition no longer affects the adoption of smoking restrictions in restaurants when policy support by the public is accounted for.

With regard to ***coercion***, Shipan and Volden (2008) observe that state adoption of antismoking legislation that entails pre-emptive clauses on related city-level government action, discourages local policy adoption.

In sum, although studies on anti-smoking policies follow some promising avenues for disentangling diffusion mechanisms, they do not yet provide conclusive evidence – at least as far as the relevance of learning and competition are concerned.

Conclusion

All told, existing research yields relevant insights on the determinants of the introduction, adoption, emulation and comprehensiveness of tobacco control policies. Furthermore, researchers have drawn on antismoking policies so as to shed light on many important issues in policy diffusion research, such as bottom-up and top-down diffusion, diffusion mechanisms at work and contingency of diffusion effects.

Generalising the findings of the present body of research to the factors that drive policy making on tobacco-control policies in general, is as yet impossible, though. This is because several dependent variables, such as agenda-setting, policy emulation and policy comprehensiveness have been covered by no more than one study, non-regulatory tobacco control policies have hardly been examined at all and the empirical focus is mainly limited to the U.S. states. However, the existing studies provide a valuable basis for specifying the models on cantonal adoptions of antismoking restrictions in later chapters.

3 Theoretical Argument: Policy Design, Innovation and Diffusion

Chapter 3 presents the theoretical argument. It serves two purposes: (1) to portray in more depth the research interest that guides this study; and (2) to set the stage for the analysis in Chapter 8 by defining the phenomena to be explained and the key explanatory variables. It is divided into three subchapters.

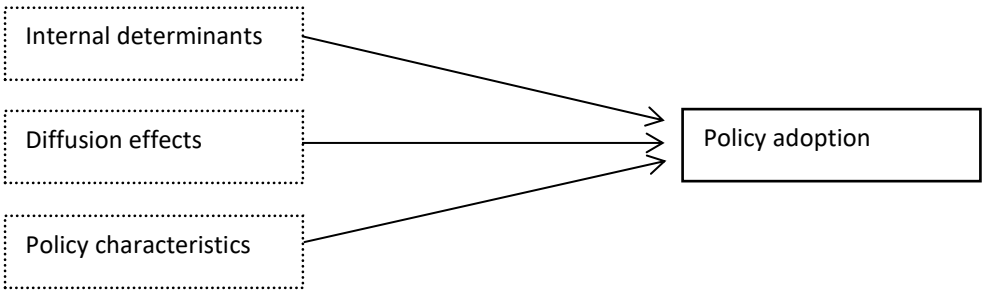
Chapter 3.1 outlines the framework of analysis and clarifies a number of conceptual issues. Specifically, it describes the potential links between policy characteristics on the one hand and the likelihood and determinants of policy adoption on the other hand, positioning the research questions raised in Chapter 1 within this framework. It then discusses the implications that the research focus chosen has for the conception of policy diffusion and explains why policy characteristics are defined in terms of *design* characteristics. Finally, it provides a short description of the various components of policy designs. Chapter 3.2 presents various hypotheses on the effects of four policy design characteristics: designated beneficiaries, degree of intervention, complexity and implementation costs. In doing so, the first section focuses on the expected direct effects, while the second one deals with the expected indirect effects. Chapter 3.3 elaborates on the design characteristics chosen; it specifies the concepts and provides the corresponding operational definitions.

3.1 Framework of Analysis and Conceptual Issues

Framework of analysis

Policy characteristics may shape governmental innovation decisions in various ways. Here, the focus rests on the impact of policy attributes on the decision on whether or not to adopt the policy.[39] When taking the characteristics of a policy as a given, the former may ***directly influence the likelihood of adoption***. If so, policy characteristics constitute a force behind policy innovation in their own right, over and above internal determinants and diffusion effects. In other words, policy attributes are conceived of as a third category of explanatory variables that have an independent effect on the probability that a state adopts a policy (see Figure 3).[40] For example, other things being equal, one might surmise that policies are the more likely to be adopted, the lower their implementation costs are. In testing their "policy attributes hypothesis", Makse and Volden (2011) follow this conception of the impact of policy attributes on adoption. More specifically, they show that the relative advantage, observability, compatibility and trialability of innovative criminal justice policies encourage their adoption, while complexity discourages it (see page 23).

Figure 3: Direct impact of policy characteristics on adoption



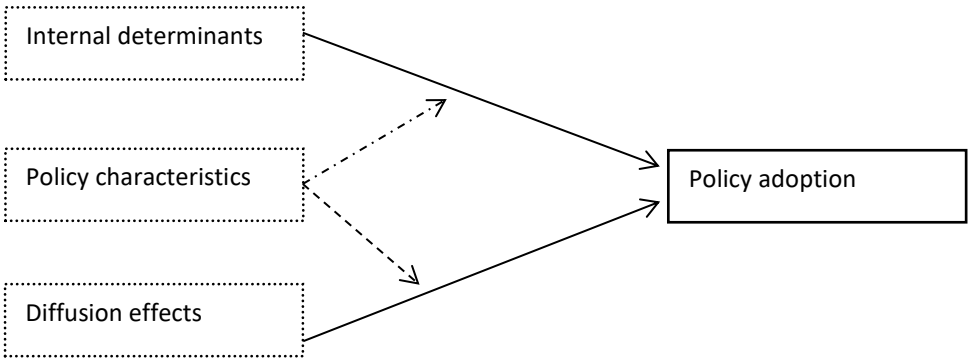
[39] Policy characteristics may also have an effect on the substance of the innovation decision: Depending on the specific set of characteristics that the original policy entails, states may be more or less likely to reinvent the policy, to retain the idea, but to devise a different policy design ("principle diffusion", see the next section), or to introduce the policy on a trial basis first (pilot testing, see Chapter 4.3). These aspects are not analysed in this study.

[40] For the ease of presentation, Figure 3 subsumes a potential adopter's previous policy choices (i.e. the adoption of policies that are complementary to, substitutes for, or prerequisites of the policy of interest – see Chapter 2.1) under "internal determinants" here. After all, they are specific to each jurisdiction.

Policy characteristics may also ***moderate the influence of internal determinants and/or diffusion effects on policy adoption***, thus affecting innovation decisions indirectly. Thus, policy attributes may determine to what extent particular state characteristics shape policy adoption. For example, the fiscal situation of a state might be quite decisive for innovation decisions on costly policies, but less relevant in the case of low-cost policies. Mooney and Lee (1995) report one pertinent finding: The adoption of abortion regulation, a morality policy, turns out to be driven by a set of internal determinants that is different from those behind economic policies (see Chapter 2.3). Policy characteristics may also condition diffusion effects, shaping the weight of particular channels or mechanisms. Brooks (2007) makes this point. She demonstrates that previous peer adoptions render pension reforms with high sunk costs by Latin American, Eastern European and low-income countries more likely. In contrast, pension reforms with lower sunk costs are not shaped by interdependent decision making among similar countries (see Chapter 2.3). Likewise, Makse and Volden (2011) analyse the interactions between relative advantage, observability, compatibility, complexity and trialability on the one hand and neighbour-based diffusion and policy learning on the other hand (see Chapter 2.3).

While Makse and Volden (2011) focus on the strength of one particular mechanism (policy learning), it is likely that policy attributes more generally condition what type or types of diffusion mechanisms are at work. This is probably most obvious for competition: Only policies that are perceived as giving adopters a clear edge over non-adopters are likely to set off competitive diffusion dynamics. But the supposition might hold for other diffusion mechanisms as well. For example, policy learning might be prompted by costly or complex policies, while decision makers might be less likely to be influenced by socialisation when it comes to deciding on such policies. Nicholson-Crotty (2009) and Boushey (2010) use this kind of reasoning in substantiating their arguments, but do not empirically study the link between policy characteristics and diffusion mechanisms. To my knowledge, thus far no study exists that explores how policy characteristics trigger one rather than another diffusion mechanism. Figure 4 summarises the discussion on how the characteristics that an innovative policy entails may indirectly affect its adoption – by means of conditioning the importance of particular internal determinants and/or diffusion effects.

Figure 4: Indirect impact of policy characteristics on adoption

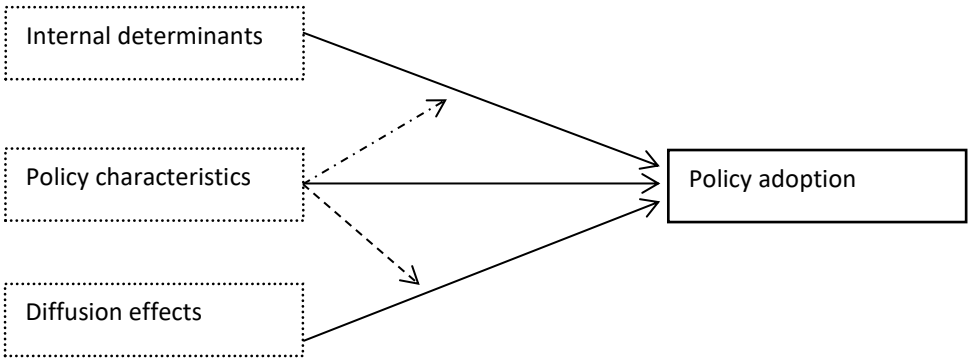


This study seeks to shed light on both the direct and the indirect influences that policy characteristics may exert on adoption. Among the research questions that were formulated in Chapter 1 and that are recapitulated below, the first one relates to the potential direct effects of policy characteristics and the following two refer to their possible indirect impact:

- Do certain policy characteristics render some innovative policies more adoptable than others?
- Do policy characteristics affect the importance of certain internal determinants for the adoption of innovative policies?
- Do policy characteristics condition the weight of diffusion effects in innovation decisions?

The framework of analysis that the study is based on is shown in Figure 5.

Figure 5: Framework of analysis: impact of policy characteristics on adoption



Policy diffusion, characteristics and designs: conceptual issues

The way that the above research questions are formulated has implications for the conception of diffusion (in the sense of diffusion-as-outcome) and policy characteristics. So as to determine the explanatory potential of policy characteristics, a clear conceptual differentiation between policy characteristics on the one hand and internal determinants and diffusion effects on the other hand is needed.[41] Besides, owing to the causal logic inherent in the research questions, policy characteristics need to antedate innovation decisions and be exogenous to them.

As regards the conception of policy diffusion, the concern of this study rests with "***model diffusion***" (Weyland 2006: 17-18). Model diffusion reflects a situation where states adopt a policy model from elsewhere and replicate both the basic idea of the model and the specific design used to put the idea into practice. Model diffusion occurs when states emulate a compact solution to a public problem from earlier adopters, with adjustments to the template being limited to minor aspects. Thus, in the case of model diffusion, decision makers decide on whether or not to adopt a distinct policy solution with a given set of attributes. The attributes of the innovative policy predate policy adoption and might thus fashion adoption decisions.[42]

But policies do not need to spread in such a compact way. Weyland (2006: 17-18) refers to "***principle diffusion***" to designate an alternative form of diffusion. Here, decision makers embrace a policy idea that another state has formulated. Yet, in implementing this principle, they devise a policy design that is quite different from the one that the earlier adopter uses. In this case, successive adoptions of the same principle are likely to produce policies with quite diverse characteristics. What is more, the attributes of innovative policies do not antedate adoption decisions, but are manufactured in their course. Under these circumstances, posing the above research questions does not make sense since the causal logic of policy attributes having a direct or indirect impact on the likelihood of adoption is not applicable. Put differently, the research questions raised are based on a "***policies determine politics"-logic*** (cf. Lowi 1972: 299), which model diffusion is compatible with. Principle diffusion, in contrast, follows a ***"politics determines policies"-logic***. Hence, the study will concentrate on instances of model diffusion.

In Downs and Mohr's (1976: 702-704) terminology, characteristics that do not vary with the adopting unit are "***primary innovation attributes***" (as opposed to "***secondary innovation attributes***", which

[41] This is an analytical distinction. Empirically, internal determinants, diffusion effects and policy attributes are intertwined. As an example, the provision of federal government funding for a particular policy (i.e. a top-down diffusion influence) is intended to reduce the implementation costs of that policy (i.e. a policy characteristic).

[42] It is debatable whether or not policy characteristics predate the adoption decision of the first state in a federal system. Secondary sources do not always reveal where from the first sub-national adopter obtained the idea for the innovation. In the Swiss context, many instances exist where the respective canton did not invent the policy, but emulated the practice of a jurisdiction outside Switzerland or followed the recommendation of an international organisation.

differ across units considering adoption). In order to ensure that policy attributes are clearly distinct from state characteristics and diffusion effects and are constant across adoptions, the former are specified in terms of primary attributes. Characteristics that reflect the basic design of the policy fulfil this criterion since they remain intact during model diffusion. Therefore, attributes that are inherent in the design of the policy might be considered an obvious choice for disentangling the effects of policy attributes on adoption. This is the main reason why this study focusses on ***policy design characteristics***. Since such a conception of policy attributes ties in with policy solutions rather than issues, this study is more closely related to the works of Brooks (2007), Boushey (2010) and Makse and Volden (2011) than to Mooney and Lee (1995) and Nicholson-Crotty (2009) (see Chapter 2.3). It does not negate the relevance of policy attributes that pertain to the issue area (e.g. issue salience, issue complexity, morality vs. economic policy). But it is based on the assumption that the solutions that decision makers can choose from within a particular issue area differ considerably in terms of their characteristics and that these differences are relevant. This is the second reason for examining the impact of policy design characteristics.[43]

In short, this study rests upon the assumption that policy innovations entail a number of integral characteristics. The latter emanate from the basic design of the policy and remain constant across adoptions. Thus, although later adopters possibly alter some features of the design, it is essentially the same policy that spreads (or, fails to spread).[44] In focusing on characteristics that are linked to the design of a policy, this study draws on a research strand within policy analysis that has recognised for a long time that public policies consist of a number of basic elements (Schneider/Sidney 2009: 104).[45]

In order to systematically describe the designs of the policies studied and derive the characteristics of interest (as will be done in Chapter 5), policy designs are disaggregated into five components, i.e. the ***objective***, the ***tool***, the ***action content***, the ***target group(-s)*** and the ***delivery system of the policy*** (see Figure 6 on the next page).[46] The ***objective*** is linked to the public problem that the policy addresses; it captures the change in societal condition that it is to bring about (cf. Birkland 2001: 153). The ***policy tool or instrument*** is the actual means used to accomplish the objective; it encapsulates some technique of social intervention that policy makers apply (Windhoff-Héritier 1987: 27). Governments can choose from a large variety of policy instruments.[47] ***Action content*** stands for the actual content of the policy tool, i.e. the type of behaviour that the direct target group is expected to engage in or refrain from (cf. Vedung 1998: 32). Policies target the behaviour of particular groups, with some addressing direct targets exclusively and others also embracing indirect targets. ***Direct target groups*** consist of the direct addressees of regulatory norms, financial incentives, information and the like. ***Indirect target groups*** are composed of individuals whose behaviour, well-being or similar the policy

[43] Besides conceptual reasons, practical considerations suggest the choice of policy characteristics that are invariant across adopters and over time. Otherwise, policy characteristics would need to be measured for each adopter and time period separately.

[44] This might be considered a fairly strong assumption. However, as Chapter 5 shows, for the actual sample of policies, the design characteristics selected for study remained largely stable across adoptions.

[45] For recent reviews of this literature, see Sidney (2007) and Howlett and Lejano (2013).

[46] This analytical division is based on elements from Birkland (2001: 153), Vedung (1998: 34) and Salamon (2002: 20).

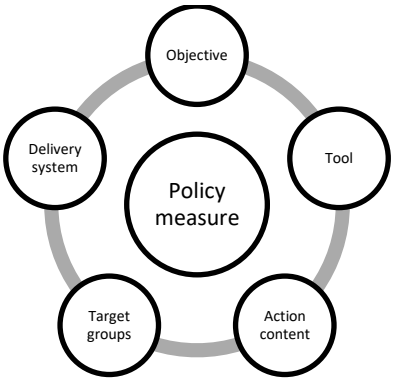
[47] The systematic study of the choice and consequences of policy instruments has been one of the main foci of the policy design literature (Howlett/Lejano 2013: 363). Thus, several attempts at compiling complete lists of policy tools available to governments exist, e.g. Kirschen's scheme of 63 economic instruments (Kirschen 1964 cited in Vedung 1998: 53-55) or Salamon's distinction of 15 tools of government (Salamon 2002: 39). Scholars also have devised policy typologies that highlight a certain characteristic of policy instruments and group the latter into a limited number of categories. Hood's "NATO"-model, which is based on the governing resource that the instrument uses (nodality, authority, treasure, organisation) (Hood 1983; Hood/ Margetts 2007) exemplifies this approach. Vedung's taxonomy of "carrots", "sticks" and "sermon" (regulation, economic means, information), which captures the degree of authoritative force that is entailed in a policy tool (Vedung 1998), is another example.

seeks to influence, without directly manipulating it. Finally, the ***delivery system*** is made up of the set of organisations that implement the policy (Salamon 2002: 20).

As an illustration of these components: A ban on smoking in restaurants aims at reducing the health risks resulting from exposure to second-hand smoke. It is based on a regulatory tool, the action content of which is that smoking is forbidden in restaurants (or is restricted to a smoker's room). As such, it pertains to the behaviour of smokers (the direct target group), while restaurant staff and clients, who are expected to benefit from less exposure to passive smoking, are the indirect target group. State agencies, such as commercial or labour inspectorates, typically enforce the policy and thus constitute the delivery system.

As a final note, from Figure 6 it becomes apparent that the study looks at the design of the most distinct manifestations of public policies, i.e. ***policy measures***. As the smallest units of public policy, policy measures are embedded into more comprehensive policy programmes and, at an even higher level of abstraction, policy fields (Howlett 2009: 75). In principle, policy programmes (e.g. tobacco prevention programmes) can be the objects of investigation of diffusion studies, too. Since programmes usually join together several measures, they offer more opportunities for modification to policy makers than individual measures do. Hence, heterogeneous designs across jurisdictions may result. That is why a focus on policy measures is more suitable for ensuring that the diffusion of the "same" policy is analysed. In selecting the policies to be studied (see Chapter 4.2), programmes will therefore be disaggregated into individual measures. Yet, if two or more policy measures are intrinsically tied to each other through ***vertical or horizontal packaging*** and are always adopted in a package, they will be analysed together.[48]

Figure 6: Policy measures: basic components of their designs



[48] Horizontal packaging means that two or more connected instruments are directed at the same target group, while vertical packaging captures situations where one instrument is designed to effect the implementation of another (Bemelmans-Videc/Vedung 1998: 257-258).

3.2 The Impact of Policy Characteristics on Innovation Decisions: Hypotheses

Hypotheses on the direct effects of policy characteristics

Do certain characteristics influence the adoptability of innovative policies? The ***Policy Characteristics and Adoption Hypothesis*** answers this question in the affirmative. Formulated in general terms in H 1.0, it is translated into four specific and testable sub-hypotheses:

H 1.0: ***Characteristics inherent to the design of innovative policies affect the likelihood of policy adoption.***

H 1.1: Innovative policies that target children for benefits ("children's policies") are more likely to be adopted than other policies.

H 1.2: Innovative policies that entail a low-degree of intervention are more likely to be adopted than highly-interventionist ones.

H 1.3: Innovative policies that are based on a simple design are more likely to be adopted than those with a complex design.

H 1.4: Innovative policies that involve low or invisible implementation costs are more likely to be adopted than high-cost policies.

Hypothesis H 1.1 is based on the assumption that the adoption of ***children's policies*** entails clear political benefits for decision makers. Children carry positive social constructions (Schneider/Ingram 1993: 336). Regardless of the particular field, for policies that explicitly confer benefits on children and adolescents, the chances of being adopted are likely to be high. Boushey's (2010) findings on the rapid pattern of diffusion of child protection policies support H 1.1 (see page 22).

In the area of public health, several factors are likely to strengthen the appeal of children's policies, including that the health of children and adolescents is particularly vulnerable and that intervention early in the life course is deemed especially effective. With policies that protect that age group from health hazards being considered as both legitimate and effective, policy makers tend to support them. Relating to Berry and Berry's (1990, 2007) unified model (cf. page 6), the designated beneficiaries of the policy are surmised to affect the motivation to innovate. Presumably, the design of the policy needs to clearly designate children and adolescents as the beneficiaries for this effect to occur. Policies that target children and adolescents among other groups are not expected to be more likely to be adopted.

As Schneider and Ingram (1990: 513) point out, "(...) public policy almost always attempts to get people to do things they might not otherwise do; or it enables people to do things they might not have done otherwise." In pushing for behavioural change, policies necessarily ***intervene into the private lives or economic sphere of the group directly targeted***.[49] In public health, policies aim at behavioural change among various types of target groups, such as private individuals, professionals (e.g. teachers, medical practitioners) and businesses so as to prevent individuals from health risks and to promote their health.

Policies differ in terms of how interventionist they are, though. Some policies leave the direct target group more choice than others in complying with the intended change. Moreover, depending on the policy content, the behaviour targeted for change may be more or less relevant to the direct target group. Innovative policies may be expected to elicit the more political opposition, the more interventionist they are. Therefore, highly interventionist policies are likely to entail considerable political risks for policy makers. Presumably, the latter do not want to provoke strong societal resistance, let alone experience that an innovation that they sponsor is defeated during the decision-making process. Probably, they are thus less inclined to support highly interventionist policies. In terms

[49] Sometimes, policies ultimately aim at bringing about behavioural change among an indirect target group. In assessing the degree of intervention, this study focuses on the intervention that aims at the direct target group. Since it is the group that is most immediately affected by the policy, it is more likely than the indirect target group to mount political opposition if the policy compromises its interests.

of Berry and Berry's (1990, 2007) model, the degree of intervention that an innovation entails is likely to affect the motivation to innovate. For these reasons, H 1.2 hypothesises the likelihood of adoption to be lower for highly interventionist policy innovations than for innovations with a low degree of intervention. Boushey's (2010) observation that issue fragility slows down the diffusion of innovative policies (see page 23) suggests that H 1.2 captures a relevant aspect of policy designs.

In order to be able to decide about the adoption of a policy innovation pioneered elsewhere, policy-makers need to understand what the innovation is about and whether it would work at home. Thus, those in charge of policy formulation have to be able to specify and flesh out the major components of the policy design, demonstrate its technical feasibility and substantiate how it will accomplish its objective. When it comes to complex policies, these activities require sound technocratic analysis, to be carried out by public officials or other policy experts who wield policy-specific expertise and have sufficient time resources (cf. Boushey 2010). Given that public administrations and parliaments have limited resources, policy innovations that entail a less complex design are more likely to be adopted (H 1.3). In referring to Berry and Berry's (1990, 2007) framework, ***complexity*** is likely to constitute an obstacle to innovation.[50]

Government budgets are limited and have to be divided among manifold rival purposes. Policy innovations that necessitate substantial (and visible) government spending on implementation may cause a reallocation of means within or among departments or may contribute to governments levying higher taxes or increasing their revenues from other sources. The reallocation of resources, either within government or between government and society at large, is likely to elicit political conflict. Framing it in terms of Berry and Berry's (1990, 2007) model, high and visible ***implementation costs*** are expected to constitute an obstacle to, and thus to lower the chances of, innovation. Besides preventing adoption during executive or parliamentary decision-making processes, in several cantons political forces that oppose a costly policy wield an additional instrument – they can subject it to a financial referendum, calling on cost-conscious voters to reject the innovation. In sum, policy innovations that are associated with low or invisible implementation costs are more likely to be adopted than their high-cost counterparts (H 1.4).

Hypotheses on the indirect effects of policy characteristics

As outlined before, policy characteristics are also likely to condition to what extent particular internal determinants and forms of interdependent decision-making shape governments' innovation decisions. The ***Policy Characteristics and Internal Determinants Hypothesis*** (H 2.0) and the ***Policy Characteristics and Diffusion Effects Hypothesis*** (H 3.0) reflect these expectations.

In formulating more specific hypotheses on the impact on internal determinants, this study draws on the fact that three of the policy design characteristics examined "mirror" state characteristics that regularly feature in policy diffusion research. The sub-hypotheses fleshed out below expect policy design characteristics to condition how important the corresponding state characteristic is.

H 2.0: ***Characteristics inherent to the design of innovative policies affect the importance of particular internal determinants for policy adoption.***

H 2.1: Ideological preferences more strongly affect the likelihood of adoption of highly interventionist innovative policies than of policies with a low degree of intervention.

H 2.2: State policy-making capacity more strongly affects the likelihood of adoption of complex than of simple innovative policies.

H 2.3: The fiscal situation of the state affects the likelihood of adoption of innovative policies that entail high implementation costs, but not of policies with low or invisible costs.

[50] This is likely to be particularly true for those Swiss cantons where administrative structures specialised on public health are rudimentary and parliaments have a low degree of professionalization (see Chapter 4.1).

As the corresponding internal determinant, ***ideological preferences*** mirror the policy characteristic "***degree of intervention***". Leftist politicians generally deem the state to be responsible for securing the welfare of society, including public health. They favour state intervention and do not eschew highly interventionist policies. Centrist and rightist parties typically assign the ultimate responsibility for most welfare issues, including public health, to the individual. They are less supportive of state intervention in general and in particular dislike highly interventionist measures. Ideological preferences are thus expected to have a stronger impact on the adoption of highly than of less interventionist policies (H 2.1).

The state characteristic "***policy-making capacity***" can be considered to match the policy characteristic "complexity". As described before, assessing policy innovations that are based on a complex design requires a substantial investment of policy expertise and time by administrative agencies and/or legislators. Weighing the adoption of policies with simple designs, in contrast, is much less resource-intensive. Against this backdrop, policy-making capacity is hypothesised to more strongly affect the adoption of complex than of simple policies (H 2.2).

The ***fiscal situation of the state*** may be characterised as the counterpart to the policy design characteristic of ***implementation costs***. Policies with high implementation costs may affect the balance of state revenues and spending, whereas policies with low or invisible costs hardly bear on government budgets. Hence, the fiscal situation of governments is likely to shape innovation decisions on the former type of policies, but not on the latter (H 2.3).

As the ***Policy Characteristics and Diffusion Effects Hypothesis*** is concerned, two specific and testable hypotheses are derived.

H 3.0: *Characteristics inherent to the design of innovative policies affect the importance of previous policy choices by peer governments ("peer effects") for policy adoption*.

H 3.1: Peer effects more strongly affect the adoption of innovative policies that are associated with high implementation costs than of policies with low or invisible costs.

H 3.2: Peer effects more strongly affect the adoption of complex than of simple innovative policies.

Similar to Brooks' (2007) argument, the political stakes in innovation decisions are assumed to be particularly high if policies are associated with high implementation costs. As expensive policies require a sizable commitment of state financial resources, decision makers are likely to want to have some proof that the policy "works". Instances of successful implementation by earlier adopters provide such cues. In situations where strong nation-wide communication networks among state officials are lacking, the even dissemination of policy experiences of previous adopters among the constituent units of a federal system is unlikely to occur. Rather, policy makers are likely to look to peer governments for relevant information, with peers being understood as governments that share institutionalised links of communication.

In short, high ***implementation costs*** pose an incentive to learn from the experiences of others and decision makers are likely to make use of relatively easily accessible information. Presumably, this constellation triggers ***interdependent decision making among peers***. In contrast, decision makers probably act more independently when deciding about inexpensive policies because they entail little budgetary risks. Thus, H 3.1 postulates peer effects to be more relevant in innovation decisions on high- than on low-cost policies.

Moreover, ***interdependent decision making*** is likely to play a more prominent part in decisions on ***complex*** than on ***less complex innovative policies*** (H 3.2). Previous policy adoptions provide decision makers with the opportunity to learn from other governments on how to put a policy into practice. In the case of simple policies, governments do not need to rely on the policy-specific expertise that earlier adopters have gained. However, if policy formulation and implementation are highly complex, such

exchange is likely to significantly lower the barriers, and thus to encourage, policy innovation. For the same reasons detailed in the paragraphs above, H 3.2 is framed in terms of peer effects.

3.3 Specification and Measurement of Policy Design Characteristics

Designated beneficiaries

According to this characteristic, policies divide into two groups: children's health policies vs. other policies. The first group comprises policies that are specifically designed to promote the health of children and adolescents or to protect this age group from health risks and diseases. The second group entails public health policies that target other groups or the population as a whole for benefits. In order to qualify as a children's health policy, the design of the respective policy needs to clearly identify children and/or adolescents as the intended beneficiaries. In other words, ***children and/or adolescents*** need to be the ***direct or the indirect target group of the policy***.

Degree of intervention

Depending on the type of target group, degree of intervention captures the extent to which a policy intervenes into the private lives or professional/business activities of the members of that group. For the purposes of this study, it is specified as a function of two aspects of policy designs – the ***coerciveness of the policy tool*** and the ***intrusiveness of the action content***.

Coerciveness reflects the level of choice that the direct target group has in complying with the behavioural change intended by the policy. Thus, coerciveness "[…] measures the extent to which a tool restricts individual or group behavior as opposed to merely encouraging or discouraging it." (Salamon 2002: 25). It corresponds to the level of authoritative force that policy makers are willing to use to make the direct target group comply with their intentions (Vedung 1998: 34-35).

Coerciveness can be understood as a gradual concept. For the sake of conceptual clarity and ease of measurement, four levels are distinguished here (see Table 2 on the next page):[51] ***Highly coercive policies*** prescribe what the direct target group has to do or must not do. An enforcement system is usually provided for; hence, the targets of highly coercive policies are given little choice on whether or not to comply with the intentions of policy makers. Governments use the maximum level of authoritative force that is available to them. Policies that are designed to reduce the occurrence of a particular behaviour through the imposition of financial disincentives or the modification of the environment in a way that makes some actions more difficult[52] entail an ***upper medium level of coercion***. While the direct target group does not have to act in line with the objective of the policy, non-compliance has a clearly visible price or is rendered difficult through a change in structural settings. Policy makers exercise a substantial level of authoritative force. Policies that are classified as entailing a ***lower medium level of coercion*** aim at eliciting certain types of behaviour through granting financial incentives, providing services or changing the environment in a way that fosters the intended behaviour. Again, the direct target group does not have to comply with government intentions. But those who fail to do so forego the benefits that the policy provides. In adopting such policies, decision makers exercise a fairly low level of authoritative force. Finally, policies with a ***low level of coercion*** provide actors with information or knowledge that encourages or discourages a certain type of behaviour. The direct target group is free whether or not to comply with the intentions of policy-makers.[53] Decision makers use a minimum of authoritative force.

[51] This classification is based on Vedung's (1998) threefold typology of policy instruments, which distinguishes regulations, economic means and information. It splits up Vedung's second category into economic means that reward, respectively punish, certain types of behaviour.

[52] The latter aspect is taken from 6 et al. (2010: 434) and Weaver (2014: 252).

[53] This holds as long as policy makers shy away from indoctrination.

Coerciveness on its own does not sufficiently capture the degree to which a policy intervenes into the private lives, professional or business activities of the direct target group. Besides the level of choice that the direct target group has in complying with the behavioural change intended by the policy, the relevance of the behaviour that is targeted for change and the degree of change required are likely to be essential as well. The resultant level of intrusion follows from the action content of the policy. For instance, a total ban on tobacco advertising is more intrusive than a prohibition of tobacco advertising in the proximity of schoolyards (but equally coercive). Such aspects are encapsulated in the concept of ***intrusiveness***.[54]

As pointed out above, two aspects are relevant in assessing the level of intrusion: ***the type of behaviour targeted for change*** and the ***scope of change***. In thinking about the first aspect, i.e. the ***behavioural importance of the action content of the policy***, several aspects come to mind. For example, does the policy interfere with an everyday activity or routine or does it affect a relatively marginal aspect of people's lives or professional or business activities? Does it compromise essential personal, professional or economic values or interests (such as autonomy, physical and psychological integrity, profitability) or does it affect less important goods? For individual policies, it is often intuitive on how to answer these questions. But the specification of this aspect of intrusiveness in a way that is applicable to all sorts of policies is less straightforward. Particularly if policies target groups that are quite different from each other, it is far from evident how to compare the behavioural importance of action content. For example, how do the levels of intrusion of a smoking restriction targeted at individuals and a restriction on tobacco sales targeted at retail businesses compare to each other?

These conceptual difficulties render intrusiveness more elusive than coerciveness. No universally applicable operational definition of intrusiveness can be presented here. Fortunately, however, the six public health policies analysed in this study likewise address economic actors (see Chapter 5) and affect activities that are important to these actors (such as the production, provision, advertising or sale of a manufactured good or service). As this aspect is constant across policies, the specification of intrusiveness can focus on the second relevant aspect, i.e. the ***degree of behavioural change*** (here, change in economic activity) that the policy intends to bring about. The below gradation of the scope of change and hence the level of intrusion (see lower part of Table 2) is based on the assumption that policies that intend to restrict or suppress a behaviour are more intrusive than policies that aim at an adjustment of behaviour. In total, four levels of intrusion are distinguished (see Table 2).

Table 2: Degree of intervention: dimensions and operational definitions

Dimension	Values
Coerciveness	▪ Low: Policy provides target group with information or knowledge ▪ Lower medium: Policy entails financial incentives, services or in-kind benefits or changes structural setting in a way that facilitates behaviour ▪ Upper medium: Policy imposes financial disincentives or changes structural setting in a way that impedes behaviour ▪ High: Policy prescribes what target group has to do or must not do and enforces compliance
Intrusiveness	▪ Low: Policy aims for loosely-defined adjustment of behaviour ▪ Lower medium: Policy aims for clearly-defined adjustment of behaviour ▪ Upper medium: Policy aims for restriction of behaviour ▪ High: Policy aims for elimination of behaviour

[54] In the theoretical and empirical literature, intrusiveness and coerciveness are often used to denote very similar concepts; some authors use the terms interchangeably (e.g. Weaver 2014). Definitions of intrusiveness can be found in some empirical studies: Intrusiveness is defined in terms of the interference of the policy with the personal living conditions of the target group (Widmer et al. 2000: 27-28), the professional identity, respect and daily routines of regulatees (Gormley 1991: 79), or the scope of change in economic practices that the policy instrument requires (Monpetit/Coleman 1999: 696).

Based on the specific values that the policies studied attain on the dimensions of coerciveness and intrusiveness, Chapter 5 groups the former into two categories: ***highly interventionist policies*** score "upper medium" or higher on both dimensions; ***policies with a low degree of intervention*** comprise all other policies.[55]

Complexity

Policy designs are complex if understanding them and assembling the necessary components require a substantial investment of technical expertise and time. In assessing complexity, three dimensions are taken into account: ***scope***, ***calibration*** and ***automaticity*** (see Table 3 below).

Scope captures whether the policy innovation consists of one or several measures. As discussed before, the policies selected may consist of more than one measure in the case of horizontal or vertical packaging (see page 38). Policies that comprise more than one measure are inherently more complex since public officials, specialised legislators or external professional experts who are involved in policy analysis and formulation have to understand the different logics of intervention and how the measures relate to each other. The demands on defining the delivery system are also higher, as usually more than one implementing institution is required.

Calibration taps into the degree to which the action content of the policy is differentiated, e.g. in order to tailor it to specific needs, conditions or the like within the target group(s). The more calibrated the policy, the more technical in nature it is. The formulation of highly calibrated policies requires more technical expertise and time, given that a number of questions of detail need to be settled and the pros and cons of different design variants need to be weighed.

Finally, policy designs may provide for more or less ***automatic delivery systems***. According to Salamon (2002: 32), "[a]utomaticity measures the extent to which a tool utilizes an existing administrative structure to produce its effect rather than having to create its own special administrative apparatus." For the purposes of this study, automaticity is understood in terms of whether the policy is delivered by structures that predate policy adoption as opposed to structures that have to be set up because of policy adoption. Policy analysis and formulation are clearly less complex if those involved do not have to ponder on what type of delivery system to set up.

For scope and calibration three discrete values (low, medium and high), for automaticity two values (low, high) are distinguished (see Table 3 for operational definitions). Overall, policies are characterised as either simple or complex.[56] More concretely, policies that register at the upper end on at least one dimension or as medium on at least two dimensions are classified as complex, whereas all other policies are coded as being simple.

Table 3: Complexity: dimensions and operational definitions

Dimension	*Values*
Scope	Narrow: Policy consists of one measure Medium: Policy consists of two measures Wide: Policy consists of more than two measures
Calibration	Low: Action content is undifferentiated Medium: Action content is somewhat differentiated High: Action content is highly differentiated
Automaticity	High: Delivery system already exists Low: Delivery system has to be created (at least in parts)

[55] This two-fold classification was chosen because of the limited number of policies studied. With a larger sample of policies given it might be preferable to differentiate between more than two levels of degree of intervention since this would hold more analytical leverage.

[56] In the case of a larger sample of policies a finer gradation might be worthwhile (see footnote above).

Through the provision of technical assistance, the pioneering canton, another early adopter, the federal government or some other institution can lower the technical expertise and time that later adopters need to invest into policy analysis and formulation. Diffusion agencies may even turn the policy into a standardised, ready-made solution.[57] Technical assistance may thus render formulating the policy less demanding. However, this does not affect the inherent quality of the innovation, which is complex due to its design features. Rather, the provision of technical assistance represents a vertical or horizontal form of interdependent decision making, which explanatory models need to separately account for (see Chapter 4.3).

Implementation costs

Implementation costs capture the financial means that cantons have to allocate for policy delivery, as disclosed in financing plans or cantonal budgets. Implementation costs, as defined here, reflect the visible costs of policy delivery; they do not cover costs that budgeting processes do not disclose (cf. Salamon 2002: 35).[58]

Costs may vary over time, e.g. between phases of pilot testing and full implementation (see Chapter 4.3). Assuming that policy makers are more concerned about the level of recurrent government spending that an innovative policy necessitates than about initial funding, implementation costs are defined as ***mature policy costs***, i.e. costs incurred once the policy is fully established. Admittedly, implementation costs are not identical across jurisdictions as particulars of policy designs and other cost-relevant factors vary across (potential) adopters. However, as the basic components of the policy design are the most important parameters of implementation costs and as they are assumed to be stable across adoptions (cf. page 36), costs can be assumed to be largely comparable. For the purposes of this study, policies are characterised as entailing either ***low/invisible or high costs***.[59] The threshold for this distinction is set at CHF 50 000.[60]

The federal government or other national organisations may cover some of the costs that states incur in adopting an innovative policy. Such organisations act as 'diffusion agencies', with financial incentives being one means of influence that such agencies can make use of. Again, the availability of external funding does not affect the properties of an innovative policy as such, but represents a diffusion effect. Hence, costs are to be specified in terms of the full costs budgeted for policy implementation, while financial top-down influences need to be taken into account separately (see Chapter 4.3).

[57] The efforts of *Fédération Fourchette verte Suisse* at defining standardised restaurant food nutrition labels for various categories of catering facilities are an example of this strategy (see Chapter 5.5).

[58] For example, the costs of implementing an individual regulatory measure are hardly visible from government budgets or financing plans unless the policy is associated with the creation of a new administrative unit or the expansion of an existing one.

[59] This two-fold classification is motivated by the same considerations as laid out in footnote 57.

[60] In principle, implementation costs should be standardised to the cost level incurred by a canton with an average population size and adjusted for inflation. Yet, for the policies studied, the classification into the two categories is evident from the level of gross spending. Hence, the unstandardized values will be reported.

4 The Policy Field Studied: Public Health Policy in Switzerland

Throughout the past two decades, numerous federal, cantonal and municipal policy-making activities in Switzerland centred on public health, often entailing processes of policy innovation and diffusion. In fiscal terms, public health is of relatively minor importance when compared to the entire health system, though. As in other OECD countries, public health accounts for a small fraction of total health expenditure, while the lion's share of health spending is allocated to curative care (OECD/WHO 2011: 40, 42). Thus, the share of total Swiss health expenditure spent on safety and health, disease and accident prevention and health promotion fluctuated between 2.6 percent in 1995 and 2.1 percent in 2012, while the absolute level of spending rose from CHF 937.9 million to 1451.5 million in the same period of time (BFS 2014).[61]

Chapter 4.1 portrays the policy field, discusses the selection of the policies studied and describes the specification and measurement of core concepts in the context of Swiss public health policy making. It is divided into three subchapters. The first one outlines public health policy making and implementation in Switzerland.[62] In doing so, it first details the competencies, fields of activity and most important state and parastatal actors[63] at the federal, and then, at the cantonal level.[64] Next, the significant role of private actors in the policy field is highlighted. The subsequent sections focus on forms of cooperation in policy making between the Confederation and the cantons, summarise federal and cantonal fiscal responsibilities and present the most important institutions of intercantonal exchange and cooperation. Unless otherwise noted, Chapter 4.1 portrays the situation as of 2015. Occasionally, important changes over time are outlined, but it is beyond the scope of this subchapter to fully trace developments in the policy field since the 1990s.

The second subchapter outlines why cantonal policy making in the fields of disease prevention and health promotion was chosen as the field of study, before presenting the criteria that guided the selection of policies. Next, the selection procedure that was used and the difficulties encountered in identifying suitable policies are described. At last, it lists the policies selected.

Chapter 4.3 then specifies the core concepts of "policy adoption", "policy implementation" and "diffusion" in the light of Swiss public health policy making and provides the operational definitions of these concepts.

[61] These figures underestimate the level of expenditure on public health somewhat, though. This is because at the federal level they cover only expenses financed by general tax revenues. Thus, the expenses for medical prevention under obligatory health insurance and the spending on alcohol, tobacco and accident prevention by the Swiss Alcohol Board, Tobacco Prevention Fund and Swiss Council for Accident Prevention respectively are not included (BAG 2007: 29).

[62] For a description of the division of responsibilities in the field of health policy as a whole, see OECD/WHO (2011: 34) and Kocher (2010).

[63] The term "parastatal" is used to designate public-law or private-law organisations that do not belong to the central public administration, but were set up by the state and mandated to deliver particular public services.

[64] The Swiss municipalities also carry out important tasks in public health as many cantons delegate policy implementation in certain areas to the lowest state level. Since the explanatory models of cantonal policy innovation that will be estimated later on do not take processes of bottom-up diffusion into account, municipal activities in public health will only be briefly mentioned in Chapter 4.1.

4.1 Description of the Policy Field[65]

Federal competencies, fields of activity and actors[66]

In line with the principle of cantonal autonomy, federal policy making in public health (as in any other policy field) is confined to tasks that the federal constitution explicitly assigns to the Confederation. Table 4 lists the constitutional provisions that delineate ***federal competencies*** in safety and health, disease prevention, accident prevention and health promotion. As becomes evident, federal jurisdiction extends to a sizable range of public health issues. Federal competencies in ***safety and health*** are particularly extensive, covering product safety, occupational safety and health, the safety of natural and built environments, and human safety in biomedicine. Regarding ***prevention***, the federal government is tasked with preventing communicable diseases as well as non-communicable diseases that are prevalent or malignant. Within its jurisdiction over obligatory health insurance, the federal level decides on what preventive medical measures are included in the package of insurance benefits. Given its regulatory competencies for accident insurance, the Confederation legislates on occupational and non-occupational accidents. The prevention of alcohol- and tobacco-related health problems also falls within federal jurisdiction. Art. 105 of the Federal Constitution of the Swiss Confederation (CH CONST.) specifically requires the federal level to combat the harmful effects of alcohol consumption. Furthermore, the Confederation has the right to levy taxes on tobacco, distilled alcohol and beer. Concerning ***health promotion***, it is responsible for the promotion of sports.

Table 4: Realms of federal competencies in public health and corresponding constitutional provisions[67]

▪ General: protection of health (Art. 118 1 CH CONST.)
▪ Product safety: regulation of foodstuffs, therapeutic products, narcotics, organisms, chemicals and items that may be harmful to health (Art. 118 2a CH CONST.); protection against ionising radiation (Art. 118 2c CH CONST.); consumer protection (Art. 97 1 CH CONST.)
▪ Occupational safety and health: protection of employees (Art. 110 1a CH CONST.); regulation of accident insurance (Art. 117 CH CONST.)
▪ Safety of the natural environment: environmental protection (Art. 74 CH CONST.); water protection (Art. 76 CH CONST.); forest protection (Art. 77 CH CONST.); protection against misuse of non-human gene technology (Art. 120 CH CONST.)
▪ Safety of the built environment: regulation of road transport (Art. 82 1 CH CONST.); railway and other means of transport (Art. 87 CH CONST.); nuclear energy (Art. 90 CH CONST.); transport of energy (Art. 91 CH CONST.)
▪ Human safety in biomedicine: regulation of research on human beings (Art. 118b CH CONST.); protection against the abuse of reproductive medicine and gene technology (Art. 119 CH CONST.); regulation of organ, tissue and cell transplantation (Art. 119a CH CONST.)
▪ Disease and accident prevention: regulation of health insurance and accident insurance (Art. 117 CH CONST.); abatement of communicable, widespread or particularly dangerous human diseases (Art. 118 2b CH CONST.)
▪ Alcohol and tobacco control: alcohol legislation (Art. 105 CH CONST.); excise taxes on tobacco, spirituous beverages and beer (Art. 131 1a-c CH CONST.)
▪ Health promotion: sports promotion (Art. 68 CH CONST.)

Source: Own compilation based on the Federal Constitution of the Swiss Confederation (Bundesversammlung 2016a).

[65] Public health policy is defined to embrace the areas of disease prevention, health promotion and safety and health. According to this delineation, it does not include curative care, i.e. the treatment of diseases.

[66] Besides the designations in the four national languages (French, German, Italian and Romansh), English titles exist for many Swiss political institutions at the national level. If available, existing names in English are made use of throughout this and later chapters. Otherwise, own translations are used. In the latter case, the official designation in German and/or French is added when the English title is used for the first time.

[67] The Swiss constitution is divided into articles, some of which are subdivided into paragraphs. Paragraphs, in turn, may use letters to list matters of fact. In the short notation used here, the first figure designates the article and the second (if applicable) the paragraph.

In all of these areas of federal jurisdiction, except for widespread or particularly dangerous non-communicable diseases, fairly encompassing federal laws and ordinances have been passed (BAG 2007: 16-18; Bundesrat 2009b: 7083-7085). Besides substantive regulatory norms, the pertinent laws encompass provisions that define the particular tasks of the Confederation (and the cantons) in more detail than the federal constitution does. Such provisions allow the federal level to devise public health measures that are based on means of intervention other than regulation, such as the provision of information to the public, the commissioning of research on public health topics and the granting of financial contributions to private organisations that are active in the areas of disease prevention and health promotion (BAG 2007: 16; for details, see BAG 2007: Anhang I-5-Anhang I-7).[68]

Regarding the governmental ***actors*** involved in public health policy making and implementation at the federal level, the Federal Council (i.e. the federal government) and the heads of the different federal departments (in particular the Federal Department of Home Affairs) define the fundamental goals of public health policy. Such strategic decisions manifest themselves in the legislature planning and the annual goals of the Federal Council and the annual goals of the departments and federal offices. Due to popular initiatives and referenda, the Swiss people also shape the direction of public health policy, at least selectively. For example, in November 2008, the Swiss people voted against the liberalisation of the consumption, and cultivation for personal use, of cannabis and thus decided on the course of action in drug policy (BK 2015). As another key actor, the federal parliament[69] has to endorse legislative change in public health. With the exception of earmarked funds and the financial means raised for disease prevention and health promotion through social insurance contributions, the federal parliament also determines the level of federal funding available for public health. Further, due to their oversight of the federal administration, the National Council and the Council of States can influence policy implementation to some extent.

Several administrative bodies at the federal level are responsible for the implementation of federal laws and ordinances on public health, including the formulation of concrete disease prevention and health promotion measures. These administrative agencies divide into federal offices (i.e. the main divisions of federal departments) and public- or private-law units outside the central administration (BAG 2007: 6-7). Within the federal administration, the Federal Office of Public Health (FOPH) is the leading actor (Achtermann/Berset 2006a: 54).[70] The second category of administrative units includes, among others, the Swiss Alcohol Board, the Federal Coordination Commission for Occupational Safety, the Road Safety Fund, the health insurance funds, the Swiss Council for Accident Prevention, the Swiss Accident Insurance Fund, Health Promotion Switzerland and the Tobacco Prevention Fund (BAG 2007: 19-21). Furthermore, several executive commissions that are composed of professional experts from outside the federal administration provide the Federal Council and the departments with technical expertise on public health (e.g. the Swiss Federal Commission for Sexual Health). It is important to note though that the federal administration plays a limited role in the implementation of federal public health (and most other) policies, with the greater part of implementation activities being assigned to the cantons and to private actors.

[68] It is beyond the scope of this chapter to summarise the wealth of actual policy measures at the federal level. For a very informative compilation of federal activities up to 2006, see Achtermann and Berset (2006b: 149-176). Current information is available on the websites of federal offices and other administrative units that are in charge of federal public health policies.

[69] The Federal Assembly (the national parliament) consists of two chambers: the National Council (NC), which comprises 200 members and represents the Swiss people, and the Council of States (CS), which represents the cantons and has 46 members.

[70] Other important offices are the Federal Food Safety and Veterinary Office, the Federal Social Insurance Office, the Federal Office of Sport, the Federal Roads Office and the State Secretariat for Economic Affairs.

Cantonal competencies, fields of activity and actors

For several reasons, the cantons enjoy wide ***competencies*** in public health. First, because of the principles of cantonal sovereignty and autonomy, jurisdiction resides with the cantons whenever it is not explicitly assigned to the federal level and the cantons are free to decide on what tasks they want to fulfil within their realms of jurisdiction (Art. 3, 42, 43 CH CONST.). Despite the expansion of federal responsibilities over the years, the cantons retain broad policy-making competencies in public health – in particular in the areas of non-communicable diseases, mental-health problems and health promotion (BAG 2007: 6). Secondly, the cantons may pass own legislation even in those areas that fall within federal jurisdiction – provided that the federal government has not yet enacted exhaustive legislation on the issue and that cantonal regulations do not counteract existing federal provisions. To give an example, the Federal Supreme Court, i.e. Switzerland's highest court, confirmed in 2002 that the canton of Geneva was authorised to restrict billboard advertising on alcohol and tobacco even though certain types of federal alcohol and tobacco advertising restrictions existed (Tribunal fédéral 2002). Thirdly, federal laws often delegate implementation to the cantons. For example, in the area of safety and health, cantons are responsible for food safety inspections and toxin controls, precaution against hazardous incidents, radiation protection, biological safety, environmental protection, workplace safety and the prevention of occupational accidents and diseases (Kocher 2010: 138). This functional division of tasks between the federal government and the cantons, with the former providing for the legal framework and the latter being in charge of implementation (*Vollzugsföderalismus*), prevails in many policy fields. Importantly, implementation is often not limited to the execution of clearly specified federal rules, but permits the cantons to adapt federal legislation to their own needs (Vatter 2014a: 133). Put differently, cantonal implementation may involve devising own policy solutions within the federal legal framework.[71]

Besides the federal provisions that delineate cantonal responsibilities for public health, as entailed in the federal constitution and laws, all cantons possess own legal foundations that define goals, responsibilities, fields of activity and particular policies in safety and health, disease prevention, accident prevention and health promotion. So as to identify the tasks that the Swiss cantons fulfil in public health, it is instructive to peruse the relevant sections of cantonal health acts (see Table 49 in the Appendix). Table 5 on the next page lists the fields of activity that are specified in these acts. When consulting this list, it is important to keep in mind that the relevant sections in cantonal health acts differ starkly in terms of the level of detail provided. Some health acts mention almost all of the areas listed in Table 5, while others specify a few fields of activity only. Further, the cantons usually do not carry out all of the tasks on their own, but delegate some of them to their municipalities. Activities typically assigned to municipalities include school medical and dental services, advisory services to new parents and sanitary police. However, there is considerable variation among cantons in terms of the scope and types of tasks delegated. Nevertheless, what is apparent from the list is that the Swiss cantons have extensive responsibilities for public health.

Due to differences in financial and administrative resources and in policy priorities, the level of actual cantonal activities in public health varies markedly. Some cantons are nowadays active in most of the areas listed in Table 5. Others confine themselves to a small number of issues in ***disease prevention*** and ***health promotion***, besides assuming their responsibilities for ***safety and health***. Most cantons fall somewhere in between these poles. Further, in the various fields of activity, the scope of cantonal policies may range from individual measures to comprehensive programmes that address multiple target groups and settings. It is also worth mentioning that Table 5 lists current cantonal tasks.[72]

[71] Research on interdependent forms of cantonal policy making on health insurance subsidies illustrates the room for manoeuvre that cantons have in implementing federal legislation (Füglister 2012a, 2012b).

[72] Within the last 30 years, cantonal activities in public health have undergone considerable change. Until the 1980s, the cantons had focussed on sanitary measures and the abatement of communicable diseases, the alleviation of alcohol-related problems and the provision of school medical services, with many of these activities

Table 5: Fields of cantonal activities in public health as defined by cantonal health acts

- Prevention of addiction (alcohol, tobacco, illicit drugs, other addictions); provision of addiction counselling services; restrictions on the consumption and sale of, and advertising for, psychoactive substances; youth protection
- Provision of school medical and school dental services; school health education; safety and health, disease prevention and health promotion in schools and childcare facilities
- Sanitary police – hygiene controls and measures (public places and buildings; restaurants, retail outlets and industrial facilities; public swimming pools and similar recreational facilities; dwellings); safety of drinking water; sewage water disposal and waste disposal; food safety and toxin controls; safe (and dignified) handling of dead bodies and burial of the dead
- Promotion of prenatal and perinatal health; promotion of maternal health; provision of advisory services to parents, in particular to expecting parents and parents of infants and small children
- Prevention of communicable diseases, including vaccination campaigns and programmes
- Prevention of non-communicable diseases; prevention of prevalent and serious diseases
- Early diagnosis of risk factors and diseases
- Prevention of accidents
- Prevention of physical violence
- Prevention of mental health disorders; promotion of mental health
- Occupational safety and health; prevention of occupational diseases and accidents; health promotion at the workplace; occupational hygiene
- Promotion of sexual health; promotion of sexual self-determination (in particular of adolescents and young adults); assistance to family planning
- Disease prevention and health promotion for the elderly
- Environmental safety; building safety
- Promotion of sports; promotion of a healthy nutrition

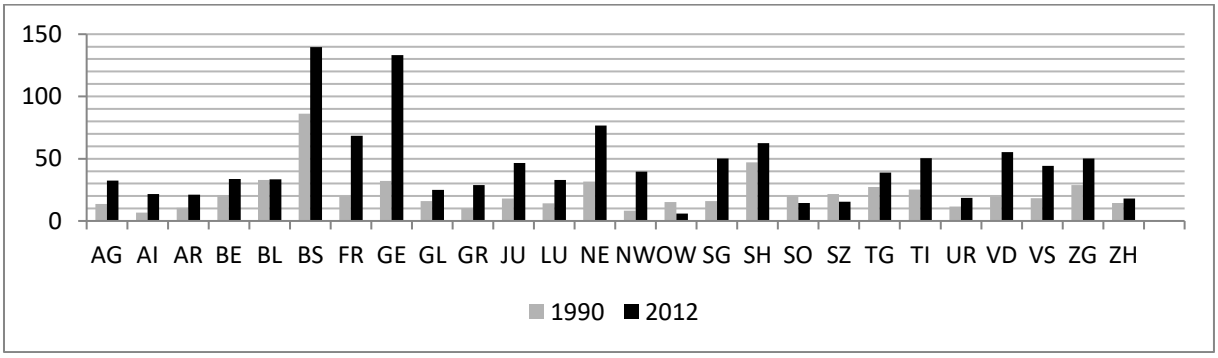
Sources: Own compilation based on analysis of cantonal health acts (see Table 49 in the Appendix).

In short, there is considerable variation in public health policies – by canton, by issue area and over time. Since comprehensive compilations of cantonal activities (past or present) are lacking (see Chapter 4.2), it is impossible to fully portray or compare cantonal activities. At least, figures on public health expenditure convey an idea about the fiscal scope of cantonal activities and trends over time. Figure 7 on the next page depicts per capita spending on public health for the 26 cantons in 1990 and 2012. The data combine cantonal and municipal spending in four categories: alcohol and drug prevention, disease control, school medical services and food safety controls (SRS 2014: 61-62). Because of differences in cantonal accounting systems, these figures have to be interpreted with some caution.[73] However, an overall trend towards increased spending on public health between 1990 and 2012 is clearly visible.

dating back to the early 20th century (Achtermann/Berset 2006a: 22-23). In the 1980s, in response to federal HIV and drug policies and the New Public Health paradigm promoted by the WHO and the United Nations, the first cantons began to shift their attention to behavioural risk factors to health and to factors essential for the preservation of health. Other cantons followed suit in the 1990s and 2000s. As a consequence, cantons extended their activities in disease prevention and health promotion to such areas as cancer, HIV/AIDS, sexual health, the prevention of addiction, healthy nutrition, physical exercise, mental health, health promotion at the workplace and health promotion for the elderly (Achtermann/Berset 2006a: 22-27).

[73] The financial statistics data are based on a harmonised accounting model. They are compiled by the municipalities and the cantons and edited by the Federal Finance Administration. Data on total revenue and spending should be fairly comparable. However, the comparability of data disaggregated by function (such as public health) is somewhat compromised since not all cantons and municipalities code the data according to the pre-determined nomenclature (EFV 2011: 63; BAG 2007: 29).

Figure 7: Per capita spending on public health (in CHF, 2010 prices), 1990 and 2012



Source: Own calculation based on data from the Federal Finance Administration (EFV 2015a).

As regards the relevant ***actors*** at the cantonal level, cantonal governments define the policy priorities in public health policy making. Nowadays, most cantons include specific public health goals in the overall legislature planning. In a few cantons, such goals feature in departmental planning instead (VBGF 2010: 14). For more elaborate planning purposes, some cantons formulate comprehensive plans on disease prevention and health promotion, which define the strategic direction for the entire policy field. More limited planning instruments that focus on specific issue areas (e.g. addiction) or target groups (e.g. the elderly) are more common, though. In several cantons, executive commissions for prevention and health promotion or for particular issues (e.g. addiction) have an important role in drafting such plans and more generally in advising cantonal governments on strategic and operational issues.[74] Specialised administrative units and/or external organisations are also often involved in preparing the strategic decisions made by cantonal governments.

Cantonal parliaments set an important parameter of public health policy making, i.e. the budgetary resources available for safety and health, prevention and health promotion policies. Further, they are in a position to adopt new or change existing cantonal acts (provided that such changes are not rejected by the people in an obligatory or facultative referendum).[75] Hence, cantonal parliaments are the most important actors when it comes to the adoption of public health policies that are enshrined in legislation. Overall, however, parliaments tend to play a less important role in cantonal than in federal public health policy making. This is because various institutional factors restrict the policy-making capacities of cantonal parliaments. These factors include the popular election and hence the distinct legitimacy of cantonal governments, the low degree of professionalization of most cantonal parliaments as contrasted with the sizable resources of many cantonal administrations, and the strongly developed institutions of direct democracy at the cantonal level (Vatter 2014b). As a result, executive dominance is more pronounced at the cantonal than at the federal level.

Regarding public health, cantonal governments tend to have a particularly strong position in disease prevention and health promotion. Based on their right to issue ordinances, they can often adopt such policies on their own (within the budgetary limits defined by parliament). At the same time, direct-democratic rights, which are more extensive at the cantonal than at the federal level, restrict traditional parliamentary competencies. Thus, legislative initiatives and facultative and obligatory referenda give the people a say on legislative change. For example, in several cantons, initiatives and referenda on smoking restrictions in restaurants were held during the past decade. Financial referenda allow citizens to restrict cantonal spending, e.g. by rejecting costly public health policies. The relative powers of the executive, the legislature and the people vary between cantons, though. In cantons with

[74] The composition and size of such commissions differ between cantons. Besides representatives of various administrative units that are responsible for public health, they often comprise professional experts from the field and may also include representatives of the municipalities and members of cantonal parliaments.

[75] Appenzell-Innerrhoden and Glarus are an exception – in these cantons, the cantonal parliaments draft legislation, but only the people's assemblies are authorised to enact legislative change.

more professionalized parliaments and less extensive direct-democratic rights (e.g. GE), parliaments are more powerful (Vatter 2014b: 255).

Similar to the federal level, competencies for public health cut across the institutional boundaries of departments and subordinate units of cantonal administrations.[76] Thus, various departments are responsible for the formulation and implementation of public health policies. In all cantons, the department that is in charge of health also holds the primary responsibility for public health. Since educational facilities are an important setting for cantonal public health policies, departments of education are another important actor in policy making and implementation. As the cantons differ substantially in terms of departmental structures and official designations do not always reveal to what department the responsibility for health is assigned, Table 6 lists the respective department in charge of health.

Table 6: Cantonal department in charge of health (including public health)

Type of department	*Cantons*
Department of health	AR, BS, SG, ZG, ZH
Department of health and social affairs	AG, AI, BE, FR, LU, NW, TI, VD
Department of finance and health	GL, NE
Department of health and economic affairs	BL
Department of justice, security and health	GR
Department of employment, social affairs and health	GE
Department of health, social affairs, personnel and municipalities	JU
Department of health, social affairs and the environment	UR
Department of health, social affairs and culture	VS
Department of home affairs	SH, SO, SZ
Department of finance	OW
Department of finance and social affairs	TG

Sources: Own compilation based on cantonal websites.

Various subordinate administrative units are typically involved in fulfilling the more routine tasks in the implementation of public health policies – within both the department responsible for health and other departments. To name just the most important ones, health, school, social security, economic affairs and labour offices, medical services and the police deliver, oversee the delivery and enforce public health policies. Again, cantonal structures differ considerably. Below, a few aspects will be highlighted, without describing cantonal structures in full detail.

All cantons have offices, divisions, subdivisions or positions that are charged with the prevention of communicable diseases and the provision of drug, food, product, water and environmental safety as well as biosafety.[77] Medical services under the direction of cantonal health officers are responsible for the abatement of communicable diseases (VKS 2015),[78] while cantonal pharmacists are to ensure drug safety (KAV 2015). Laboratories that are headed by cantonal chemists carry out inspections, controls and analyses that are to ensure food, product, water, environmental and biosafety (VKCS 2015). In doing so, these cantonal units implement relevant federal acts. Further, in all cantons, labour

[76] The Swiss cantons use different designations for their administrative units. For example, some cantons term the main units of administration "departments", whereas other cantons designate them as "directorates". For reasons of comparability, generic terms are used here. Hence, the term "departments" is used to designate the organisational units that constitute the highest level of cantonal administrations, i.e. the units that are headed by ministers. "Offices" stands for the administrative units that are directly subordinate to departments, whereas "divisions" and "subdivisions" refer to administrative structures within cantonal offices. The term "position" is used for the smallest organisational units.

[77] Several smaller cantons run joint institutions, in particular joint laboratories for food and product safety.

[78] In some cantons, medical services also direct or supervise school medical services and/or are responsible for non-medical measures in disease prevention and health promotion (VKS 2015).

inspectorates exist, which ensure compliance with federal occupational safety and health regulations (IVA 2015). In short, cantonal health officers, chemists, pharmacists and labour inspectors take care of preventive medicine and safety and health at the cantonal level.

Regarding the implementation of health promotion and non-medical disease prevention policies, all cantons have designated a delegate, who coordinates cantonal activities and represents the canton in the ***Association of Cantonal Delegates for Health Promotion*** (ADHP) (*Vereinigung der kantonalen Beauftragten für Gesundheitsförderung in der Schweiz/Association suisse des responsables cantonaux pour la promotion de la santé*) (VBGF 2015).

Likewise, in drug policy, a delegate for drug-related issues coordinates cantonal activities. Jointly these delegates form the Conference of Cantonal Delegates for Drug-Related Issues (*Konferenz der Kantonalen Beauftragten für Suchtfragen/Conférence des délégués cantonaux aux problèmes des addictions*) (SODK 2018).

Apart from that, cantonal administrative structures are quite diverse.[79] First, regarding the second highest level of cantonal administrations, the overall responsibility for health promotion and disease prevention mostly resides with cantonal health or similar offices. St. Gallen is the only canton that has an office for prevention (*Amt für Gesundheitsvorsorge*). In Bern, Nidwalden and Obwalden, the office for social affairs is responsible for health promotion and disease prevention, while in Basel-Landschaft the general secretariat of the department fulfils that task. Secondly, all cantons rely to some extent on public- or private-law organisations outside the central administration for the delivery of health promotion and disease prevention measures. Thus, they regularly award performance mandates to external organisations as well as subsidise organisations that are active in disease prevention and health promotion. Yet, the cantons diverge in terms of the extent to which they make use of external bodies. In this respect, the most conspicuous difference is that five cantons (JU, UR, SH, VS, ZH) have contracted out health promotion and prevention almost entirely. In those cantons, external organisations are mandated to serve as specialised units on health promotion and prevention and to implement the lion's share of cantonal activities.[80] Third, if we look at those cantons that have not contracted out health promotion and prevention, we find that the level of administrative resources that cantons have at their disposal ranges from sizable specialised divisions to the assignment of these functions to one particular multifunctional position (i.e. the head of the cantonal health office or the cantonal health officer).

Private actors in public health policy making and implementation

Private organisations play an important part in the field of public health, notably in disease prevention and health promotion. Manifold such organisations exist, including local, regional and national organisations. In terms of degree of professionalization and size, the spectrum ranges from small self-help groups to large-scale organisations with sizable professional staff levels. Both non-profit and for-profit organisations are active in public health. Many organisations specialise in a particular issue area (such as addiction or healthy nutrition), while others cover a wider range of topics. Health leagues, professional and specialist organisations, centres of competence and other service deliverers, patient organisations, health insurance funds and many more engage in public health. Furthermore, various networks of public health organisations exist, which join organisations according to issue area (e.g.

[79] This section is based on an analysis of cantonal websites.

[80] These organisations are: *Fondation O_2* (JU), *Gesundheitsförderung Uri* (UR), *Verein für Jugendfragen, Prävention und Suchthilfe VJPS* (SH), *Gesundheitsförderung Wallis* (VS) and the Epidemiology, Biostatistics and Prevention Institute of the University of Zurich (ZH). In Uri, Schaffhausen and Zurich, the heads of these organisations also serve as cantonal delegates for health promotion. In Jura and Valais, a staff member of the cantonal administration fulfils this function.

mental health) or setting (e.g. schools or hospitals). In short, a myriad of private organisations deals with public health issues.[81]

In terms of public health policy making and implementation, private organisations matter in several ways. To begin with, in disease prevention and health promotion, private organisations are often at the origin of policy innovation. In many instances, private organisations devise new strategies and approaches and launch innovative projects. In adopting public health policies, federal, cantonal and municipal governments regularly draw on such privately-initiated projects.[82] Secondly, as mentioned above, the representatives of private organisations serve (among others) on executive commissions and thus bring in their ideas and expertise into policy making. Third, private organisations participate in the political process as advocacy groups that lobby for pro-public health policies (cf. Vatter/Rüefli 2014: 839). Fourth, they raise financial and human resources independently from the state (e.g. through donations or volunteering) and are thus in a position to provide services or benefits that are neither paid for nor delivered by state authorities. Finally, owing to the pattern of subsidiary policy implementation in Switzerland, private organisations also deliver a sizable share of services and benefits in disease prevention and health promotion on behalf of federal, cantonal and municipal authorities.

Cooperation between the Confederation and the cantons in public health policy making[83]

As the above paragraphs show, the federal government and the cantons are both responsible for public health. In safety and health, a clear division of federal (legislation) and cantonal tasks (implementation) exists. In disease prevention and health promotion, the federal level and the cantons fulfil parallel and overlapping tasks, though.[84] Naturally, this constellation raises the question as to whether and in what ways the two state levels cooperate in these areas. Below, two aspects of vertical cooperation are sketched – the formulation of joint policy priorities and specific policies.[85]

So far, federal government and cantons do not engage in any process of comprehensive priority-setting for public health. Thus, an overall public health strategy that is mutually agreed upon is lacking (Achtermann/Berset 2006a: 138, 150).[86] However, the Confederation and the cantons have intensified their cooperation at the strategic level in recent years. More specifically, they set up the ***National Health Policy Dialogue*** as a permanent platform for exchange between federal and cantonal officials.

[81] A complete list of public and private public health organisations does not exist. However, two websites list a number of organisations – the website of the Swiss Society for Public Health (Public Health Schweiz 2015) and QUINT-ESSENZ, which also allows searching for different types of organisations (Health Promotion Switzerland 2015).

[82] To give an example, the private foundation *IdéeSport* devised and carries out the project "OpenSunday", which intends to promote physical exercise among children aged 7 to 12 years through the opening-up of local sports halls every Sunday afternoon, including the provision of sports equipment and guidance. Currently, nine cantons have absorbed this project into their programmes on the promotion of a healthy body weight (Stiftung IdéeSport 2015).

[83] For an assessment of the quality of coordination in public health, see the last OECD review of the Swiss health system (OECD/WHO 2011: 116-121).

[84] According to Achtermann and Berset (2006a: 31-34), federal and cantonal responsibilities used to be clearly separated. Shared responsibilities arose in the late 1980s when the federal government assumed new tasks in response to HIV/AIDS and drug-related problems.

[85] Other forms of cooperation are the participation of cantons in federal policy making through the vertical institutions of Swiss federalism as well as the consultation of the Conference of Cantonal Governments (*Konferenz der Kantonsregierungen/Conférence des gouvernements cantonaux*) on the Federal Council's legislature planning (Achtermann/Berset 2006a: 130-139). They are not elaborated here.

[86] A federal bill on prevention and health promotion from 2009 provided for the Federal Council, in cooperation with the cantons, to formulate and adopt national goals on disease prevention and health promotion. These goals were to serve as the cornerstones of a coherent Swiss strategy in the policy field and were to direct federal and cantonal policy making alike (Bundesrat 2009a, 2009b). However, due to the rejection of the draft law by the Federal Assembly in 2012, binding national goals have not been formulated to date.

Since its initiation in 2004 and particularly since its strengthening in 2013, the platform has allowed the Confederation and the cantons to define joint goals in specific areas of health policy, including public health, and to launch projects in order to accomplish these goals. The National Health Policy Dialogue makes recommendations, which are directed at the Federal Council and the cantons, but are not binding (Bund/GDK 2003: 2-3).

Similar to the identification of policy priorities, the separate formulation of specific policies by the two state levels used to be and still is the predominant pattern (cf. Achtermann/Berset 2006a: 142, 145). With the exception of drug policy and the prevention of HIV/AIDS, federal and cantonal cooperation had been infrequent (Achtermann/Berset 2006a: 145). In recent years, this picture has changed somewhat as efforts at joint policy formulation have intensified. This is evident from the National Health Policy Dialogue and from the evolution of ***national prevention programmes***. While the federal government used to develop such programmes on its own authority, several recent and current programmes were formulated in cooperation with the Swiss Conference of the Cantonal Ministers of Public Health (CMPH). These include the national prevention programmes on alcohol (2008-2012, 2013-2016), on tobacco (2008-2016) and on nutrition and physical activity (2008-2016), with the CMPH being involved in the strategic direction of the first two programmes (BAG 2008a, 2008b, 2008c, 2012, 2013a). While national prevention programmes define joint goals, objectives and areas of intervention, cantons are free to decide on whether and how they contribute to programme implementation.

Cantonal and federal fiscal responsibilities in public health

In general, Confederation and cantons pay for the public health tasks that they fulfil from their own revenues (Vatter/Rüefli 2014: 836). Based on federal legislation, cantons receive or have access to four particular forms of funding for public health measures, though:

(1) They receive one tenth of the taxes that the Swiss Alcohol Board collects on spirituous beverages, with the amount being split among cantons in proportion to their population share. They have to use these financial means for the prevention of the abuse of alcohol or other psychoactive substances and are required to give account of how they spend their share of revenues by submitting an annual report to the Swiss Alcohol Board (EAV 2015a).

(2) Since 2006, cantons that establish ***tobacco prevention programmes*** can receive funding from the Tobacco Prevention Fund (TPF).[87] Provided that the cantonal programme contributes to the federal tobacco control strategy (i.e. the National Tobacco Programme 2008-2016) and meets certain other requirements, the TPF covers up to 50 percent of programme costs (TPF 2012).

(3) Health Promotion Switzerland, a joint institution of cantons and health insurance funds (see page 57), co-finances ***cantonal action programmes on a healthy body weight among children and adolescents*** since 2007 (Gesundheitsförderung Schweiz 2015). Again, cantonal programmes have to fulfil certain criteria to be eligible for funding.

(4) Under the Federal Accident Insurance Act, a supplement of 6.5 percent is levied on insurance premiums in order to finance the prevention of occupational accidents and diseases. Cantonal labour inspectorates receive a small fraction of these earmarked contributions (BAG 2007: 33).

Institutionalised forms of cantonal exchange and coordination in public health

Besides temporary forms of cooperation, the Swiss cantons have several institutions at their disposal that allow for exchange and joint policy formulation in public health. The most important institutions

[87] TPF is a parastatal unit that pays for measures that are to prevent smoking initiation, to facilitate smoking cessation and to protect non-smokers against passive smoking. It is funded through a levy of 2.6 centimes on every packet of cigarettes sold (TPF 2016).

are the ***Swiss Conference of the Cantonal Ministers of Public Health (CMPH)[88], including its regional and technical conferences***, and ***Health Promotion Switzerland***.

CMPH, which was founded in 1919, aims at facilitating intercantonal exchange on health issues and at representing cantonal interests vis-à-vis the Confederation (Achtermann/Berset 2006a: 95). It is composed of the 26 cantonal health ministers, who constitute the plenary assembly of the organisation (GDK 2015). It also possesses a managing board, which is made up of eleven health ministers, and a permanent secretariat with currently 15 full-time positions (GDK 2015). In the 1990s and 2000s, CMPH paid relatively little attention to public health (Achtermann/Berset 2006a: 98; van der Linde 2005: 48). The participation of the CMPH in national public health policy making and the related creation of an organisational unit on health policy strategies, disease prevention and health promotion within the secretariat suggest that public health figures somewhat more strongly on its current agenda. Still, none of the many internal technical commissions, working groups and similar specialised bodies of the national association deals with public health (cf. GDK 2015).

From the mid-1970s onwards, four ***regional conferences*** of the CMPH were created (Achtermann/ Berset 2006a: 81-87). Each of these is made up of the cantonal health ministers of the respective region. Most cantons belong to one regional conference, but three cantons are affiliated with two conferences (see Table 7). The level of intercantonal cooperation within these conferences varies greatly, with cooperation being much stronger within the *Conférence latine des affaires sanitaires et sociales* (CLASS) than among the members of the other conferences (Achtermann/Berset 2006a: 74, 80).

Further, CLASS is also the only regional conference that has institutionalised a platform for cooperation in disease prevention and health promotion, the *Commission Prévention et Promotion de la Santé* (CPPS). CPPS is a permanent commission that is endowed with its own budget and secretariat (VBGF 2010: 21-22).[89] It is thus not surprising that the French-speaking cantons and the Ticino have developed numerous joint projects in disease prevention and health promotion (Achtermann/Berset 2006a: 86). In contrast, the other three regional conferences do not have any permanent structures devoted to disease prevention and health promotion (VBGF 2010: 21-22; Achtermann/Berset 2006a: 80). Inter-regional projects are thus rare in North-western, Eastern and Central Switzerland (Achtermann/Berset 2006a: 100).

Table 7: Regional conferences within the Swiss Conference of the Cantonal Ministers of Public Health

Regional conferences	*Member cantons*
Central Switzerland (*Zentralschweizer Gesundheits- und Sozialdirektorenkonferenz, ZGSDK*)	LU, UR, SZ, NW, OW, ZG
Eastern Switzerland (*Gesundheitsdirektorenkonferenz der Ostschweizer Kantone und des FL*)	ZH, GL, SH, AR, AI, SG, GR, TG[90]
Northwestern Switzerland (*Nordwestschweizer Gesundheitsdirektorenkonferenz*)	BE, LU, SO, BS, BL, AG, JU
Romandie & Ticino (*Conférence latine des affaires sanitaires et sociales, CLASS*)	BE, FR, TI, VD, VS, NE, GE, JU

Note: BE, JU and LU are members of two regional conferences. *Source*: GDK (2014).

[88] Other important institutions are the Swiss Conference of Cantonal Ministers of Social Affairs (*Konferenz der kantonalen Sozialdirektorinnen und Sozialdirektoren/Conférence des directrices et directeurs cantonaux des affaires sociales*), which is responsible for certain areas of drug policy (in particular illicit drugs and behavioural addictions), as well as the Conference of Cantonal Delegates for Drug-Related Issues (cf. page 55), which is a technical conference of the former (SODK 2018).

[89] The CPPS has been formerly known as the *Dispositif intercantonal de Prévention et de Promotion de la Santé* (DiPPS) (Achermann/Berset 2006a: 86).

[90] The Principality of Liechtenstein is not relevant for this study and is thus excluded.

Apart from these regional conferences, five technical conferences are integrated into the CMPH, i.e. the associations of cantonal health officers, dental officers, pharmacists, chemists and delegates for health promotion (KdK 2012). The first four serve as platforms for intercantonal coordination in fields of safety and health, while the ***Association of the Cantonal Delegates for Health Promotion*** (ADHP) is to further cooperation in disease prevention and health promotion (on ADHP, see also page 53). In contrast to regional conferences, technical conferences do not convene government representatives, but officials from public administrations.

ADHP was founded in 2000 by 15 cantons (VBGF 2010: 21). Nowadays, all cantons are represented. The members of the conference divide into ***four regional sections***.[91] The 26 cantonal delegates for health promotion meet at least once a year, while the regional sections hold at least three annual meetings (VBGF 2013: 2-3). Furthermore, ADHP has a managing board that consists of four members, each of whom represents one region, as well as a small secretariat.

Whereas the intercantonal conferences just described clearly belong to the horizontal institutions of Swiss federalism (cf. Vatter 2014a: 136-138), ***Health Promotion Switzerland*** represents a different type of institution. Being founded in 1989 on the initiative of the canton of Vaud, the institution became enshrined in federal legislation in the course of the 1994 revision of the Federal Health Insurance Act (van der Linde 2005: 32; BAG 2007: 22). As laid down in Art. 19 of the Federal Health Insurance Act, Health Promotion Switzerland is a joint institution of cantons and health insurance funds, being mandated to stimulate, coordinate and evaluate measures in disease prevention and health promotion. It is financed through earmarked levies (BAG 2007: 22).[92] As a private-law foundation, Health Promotion Switzerland is governed by a board that determines the strategic direction of the organisation. The majority of seats of the board are allotted to cantons and health insurance funds on a parity basis. Besides representatives of other public health organisations, the board includes one person that is dispatched by the FOPH since Health Promotion Switzerland is subject to federal surveillance (BAG 2007: 22).

Health Promotion Switzerland is not a purely intercantonal institution. Nevertheless, it constitutes an important channel for cooperation between cantons. Many of the projects sponsored by Health Promotion Switzerland are developed and tested by a small number of cantons in collaboration with the staff of the organisation. Once integrated into one of the programmes of Health Promotion Switzerland, these measures become available to all cantons. As mentioned in the section above, the organisation also provides financial incentives for the adoption of disease prevention and health promotion measures through the partial funding of cantonal action programmes on a healthy bodyweight. During the period 2007-2018, Health Promotion Switzerland concentrates on three priority areas: healthy body weight among children and adolescents, mental health/stress and the strengthening of health promotion (Gesundheitsförderung Schweiz 2006).

4.2 Selection of Policies

Rationale for the choice of the policy field

Swiss cantonal public health policies – or more precisely, disease prevention and health promotion policies – are used as the empirical basis for testing the hypotheses as formulated in Chapter 3. In principle, the implications of policy attributes for innovation decisions should be similar for national, subnational and local decision making regardless of the country and policy field chosen. So, what are the reasons for focussing on the Swiss cantons and on disease prevention and health promotion?

[91] The division is the same as the one displayed in Table 7, with the exception that each canton participates in one section only (BE: North-western Switzerland, LU: Central Switzerland, JU: Romandie & Ticino). CPPS serves as the regional section of the Romandie & Ticino.

[92] Currently, every person insured under obligatory health insurance pays an annual contribution of CHF 2.40.

Scholarship both on policy diffusion within federal states and across nation states is extensive. Both approaches to studying diffusion have their particular pros and cons. In focussing on policy diffusion among subnational units, this study seeks to exploit one comparative advantage of research on federal policy diffusion: Subnational units are more similar to each other in institutional, economic and socio-cultural terms than countries are. There is no denying that sizable differences between the Swiss cantons exist (Vatter 2014b: 248-249). Nevertheless, thanks to their integration into the same superordinate political system, Swiss cantons (or subnational jurisdictional units in any other country) share more commonalities than countries in a sample of similar size would do. This is advantageous as it facilitates model specification and reduces the risk of omitting relevant explanatory factors.

For various reasons, the Swiss cantons are a suitable choice for studying policy innovation and diffusion in a federal context. As described in Chapter 4.1, they enjoy wide jurisdictional competencies and responsibilities, whereas the Confederation is more constrained in its scope of action. As a result, the cantons are often at the forefront of addressing pressing policy problems, resulting in the adoption of innovative policies. Further, thanks to the existence of manifold networks of cantonal government members, senior and expert officials (cf. page 55), the cantons have a large number of platforms for exchange and coordination at their disposal (Vatter 2014a: 136-138). Knowledge about innovative policies that are adopted elsewhere in the country is thus likely to spread among cantonal decision makers.[93] In short, the Swiss political system fulfils important ***prerequisites for horizontal policy diffusion***. Hence, Swiss cantons constitute an appropriate setting for an investigation into the impact of policy attributes.[94]

As regards the selection of policies studied, ideally policies from a wide range of fields would enter the analysis so as to ensure that the results obtained hold for policy innovation choices in public policy in general. Apart from limited resources, a concern for appropriate model specification precluded the selection of a highly diverse set of policies, though. Internal determinants and diffusion effects differ across policy fields (cf. Karch 2006: 408). Moreover, specific explanatory factors may have opposite effects, such as furthering policy adoption in one field, while impeding it in another. Models on policies from multiple fields, which have to take such differences into account, thus become highly complex.[95] That is why this study concentrates on one field, privileging correct model specification and measurement validity over a high level of generality.

In terms of the actual policy field chosen, disease prevention and health promotion lend themselves to the present research purpose for two reasons. First, cantonal powers are particularly extensive (see page 49). Besides, as Figure 7 on page 51 illustrates, the spending on public health (with the lion's share falling upon disease prevention and health promotion) has increased significantly during the past 25 years. New cantonal activities are likely to account for a sizable share of this growth. Thus, a sufficient number of policy innovations that may serve as objects of investigation should be available.[96]

Criteria for policy selection

For both theoretical and practical reasons, the policies selected need to fulfil a number of conditions – they must (1) be ***public policies***, (2) fall into the domains of ***disease prevention and health promotion***, (3) fall within ***cantonal jurisdiction***, (4) be ***substantive policies***, (5) constitute ***policy***

[93] The division of the country into four language regions might impede the diffusion of policy ideas somewhat, though.

[94] Compared to the U.S. states, the choice of Swiss cantons as objects of investigation is associated with one methodological drawback: there are only half as many cantons as there are U.S. states. For policies that hardly spread, the resultant small number of adopters can impede model estimation (see footnote 184).

[95] Of course, this problem may arise whenever two or more policies are pooled into the same model. But it is exacerbated when the policies come from highly different fields.

[96] Nevertheless, the identification of suitable policies proved to be much more demanding than expected (see the next but one section).

innovations and (6) have been ***adopted by the first Swiss canton between 1991 and 2005***. These conditions are detailed and justified below:

(1) The condition that policies must be public policies might seem obvious. Nevertheless, considering the strong presence of private actors in public health and the resultant coexistence of public and private activities (see Chapter 4.1), it is worth to be stated. As understood here, public policies are based on an ***authoritative decision made by the people, the cantonal parliament or government***. However, they do not need to be delivered by public agencies. Instead, they may be implemented by private organisations under a public performance mandate.

(2) See the previous section.

(3) Owing to the focus on horizontal policy diffusion among the Swiss cantons, the policies studied need to fall under cantonal jurisdiction. Put differently, neither the Confederation nor the municipalities, but the cantons must decide on policy adoption. As a matter of clarification, areas of ***exclusive cantonal jurisdiction*** as well as those of ***concurrent or competing federal and cantonal jurisdiction*** meet this condition.[97] In contrast, the incorporation of federal rules into cantonal legislation is not considered as an instance of cantonal policy innovation. Similarly, issues that the municipalities have the primary responsibility for (at least in some cantons) are disregarded. Instances where cantonal decision makers adopt a policy, but delegate its implementation to the municipal level qualify as cantonal policy making, though.

(4) The selection of policies is limited to substantive policies; institutional policies are excluded.[98] In public health, ***substantive policies*** aim at directly affecting individuals' health outcomes, whereas ***institutional policies*** modify the institutions and procedures of public health policy making and implementation. Substantive policies address societal actors, while institutional policies target state actors (and sometimes societal actors, too). As a result, explaining the adoption of these different types of policies necessitates also different types of independent variables. Since the inclusion of substantive and institutional policies into the same models would "overstretch" the latter, the focus rests on substantive policies. Hence, policies that alter the internal workings of political or administrative institutions, modify the overall policy process (e.g. health impact assessments), affect coordination among public and private actors (e.g. networks) as well as research, monitoring and evaluation activities are disregarded.

(5) As other political science diffusion research, this study is driven by an interest in policy innovation rather than incremental policy change. Policy innovation is defined in broad terms here. Based on an adaptation of a typology devised by Knill et al. (2010), three instances of policy making are classified as innovation: (1) a canton intervenes into a particular public health issue for the first time (***issue initiation***); (2) a canton replaces an existing policy measure in a public health issue area with a new one (***issue realignment***); and (3) a canton complements existing public health policy measures with a new one (***issue expansion***). Most policy innovations selected will fall into the third category since instances of issue initiation or realignment are relatively rare. In line with previous scholarship, the calibration of already existing policies is not considered as innovation (cf. Chapter 2.1).

(6) Finally, the first cantonal adoption of each policy selected must have occurred between 1991 and 2005. Longitudinal data on many control variables exist from 1990 onwards. For previous years, such data are difficult to come by. For the purpose of addressing the research questions of this

[97] Concurrent jurisdiction means that the Confederation and the cantons have the right to regulate a subject on the basis of separate legislation (Serdült/Schenkel 2007: 528). In areas of competing jurisdiction, cantons may pass own legislation as long as the Confederation has not exhausted its superior legislative competencies. Under the conditions of competing responsibilities, federal legislation puts an end to processes of horizontal diffusion. In modelling cantonal policy adoptions, this eventuality can be handled by limiting the period of observation to the years up to federal legislation.

[98] This distinction is based on Howlett and Ramesh (2003: 116), who use the terms of "substantive policies" and "procedural policies".

study, it is important to trace the spreading of the policies from the first cantonal adoption onwards. Given the lack of data for the decades prior to the 1990s, policy innovations pioneered before 1991 thus cannot be considered. Originally, it was envisaged to limit the period of first-time cantonal adoption to the year 2000. The idea was that policies that were pioneered by 2000 would have had ample time to diffuse by 2013 (i.e. the end of the observation period). However, information on cantonal policy making in the 1990s was difficult to obtain. Therefore, the period of first-time cantonal adoption was extended to 2005 so as to be able to select a larger number of policies.

Selection procedure and difficulties encountered

Public health policies that meet the six conditions specified in the section above constitute the universe of cases for this study. Ideally, the selection procedure used accomplishes two objectives. First, it ensures adequate leverage for testing the hypotheses of interest. This calls for a sample of policies that exhibit sufficient variation in terms of policy attributes (the key explanatory variables) as well as a sufficiently large sample of policies in order to enhance the chances of detecting the effects of the policy attributes studied (if existing). Secondly, the selection procedure guarantees external validity, i.e. allows for the generalisation of results from the policies selected to the universe of relevant public health policies.

The ***absence of a comprehensive inventory of public health measures in Switzerland*** impeded the selection of policies. In order to identify relevant policies, the websites of cantons and of professional organisations were checked, existing databases were consulted and a number of policy documents were screened. In addition, a survey among public health professionals was conducted. Yet, for various reasons, this approach to selecting relevant policies did not prove very efficient. As Chapter 4.1 shows, public health is a highly complex field that comprises numerous subfields and a plethora of actors, both public and private. As a result, a vast number of activities exist that might be eligible for inclusion into the sample. Once an activity was identified, it often turned out to be very demanding to ascertain whether or not it met the selection criteria, in particular the sixth one. For policies that are not enshrined in legislation, it was particularly challenging to establish what cantons had adopted the policy, when they did so and whether policy adoption by the pioneering canton fell into the period between 1991 and 2005. Unfortunately, the majority of activities that were checked failed to meet at least one criterion.

The difficulties encountered are also partly due to a selection procedure that was suboptimal. For the sake of a high level of generality, activities from a wide range of public health issues were examined.[99] It would probably have been advisable to concentrate the efforts on one or a small number of pre-selected areas and to screen these areas in-depth. Hence, despite considerable time spent on the search for policies, only a few policies could be identified.

The policies selected include two tobacco control policies (the ***bans on tobacco billboard advertising*** and ***on tobacco sales to children and adolescents***), two alcohol control policies (***restriction on alcohol sales at petrol stations***, ***ban on takeout alcohol sales at night***), one policy in the area of nutrition (***restaurant food nutrition labelling for restaurants***) and one measure for the secondary prevention of cancer (***breast cancer screening programmes***).

4.3 Specification and Measurement of Core Concepts in the Context of the Policy Field

Apart from policy characteristics, "***policy adoption***" and "***diffusion***" are the most important concepts used in this study. This subchapter specifies and operationalises "adoption" and "diffusion" in the light

[99] A concern about the fact that different policies that address a particular public health problem are often adopted at the same time, e.g. on the occasion of a revision of the cantonal health act or the enactment of a cantonal action programme, also motivated the search for policies from diverse subfields.

of the policies studied and the institutions that shape Swiss public health policy making. The first section looks at policy adoption and discusses a number of issues that arise as some adoptions do not manifest themselves in cantonal statutory provisions. Afterwards, "***policy implementation***" is defined. This is because two specifications of regional diffusion will be used throughout the analyses – one based on the date of policy adoption, the other based on the date of policy implementation (for the reasons, see below). The three following sections deal with the specification and measurement of policy diffusion, first clarifying the approach towards the study of diffusion effects and subsequently introducing the relevant ***regional diffusion*** variables as well as variables that capture nationwide diffusion stimuli ("***point-source diffusion***").

Policy adoption

As most policy innovation and diffusion research, this study seeks to explain the adoption of policies. In general, the literature does not pay much attention to the specification of the concept of policy adoption. This is because most studies focus on the adoption of ***policies that have a statutory basis***, which renders the definition of policy adoption fairly straightforward: The policy is adopted once the relevant legal norm is authoritatively approved of. Since the date at which legal provisions are enacted is usually published in official sources, data on policy adoption are also relatively easy to collect. Due to its primary concern with policy making, diffusion research normally does not follow up on policies once they are passed. Yet, it (implicitly) assumes that policies that are adopted are also implemented and thus lead to actual policy change.

In line with this conception, this study considers policies as being adopted by a particular canton if the competent legislative body, i.e. government, parliament or the people, takes an ***authoritative decision in favour of the policy***. Framing it in terms of the policy cycle, policy adoption signifies that the policy has successfully completed the decision-making stage. Upon closer inspection of the policy processes underlying some of the six policies studied, it becomes evident that some clarifications are needed in order to make this specification workable. For, in some instances, the transitions between the stages of policy formulation, decision making and implementation prove to be fuzzy and policies turn out to cycle through these stages more than once. The resultant succession of decisions by different actors renders it more difficult to determine the whether and when of policy adoption than the above definition suggests.

As an example, in 1993, the government of Vaud authorised and funded a pilot project, which tested the feasibility of breast cancer screening programmes in three districts of the canton. It lasted until January 1999.[100] In March 1999, a canton-wide screening programme was established, subsequent to the cantonal parliament appropriating programme funding at the end of 1998. In this example, the policy entered the decision-make stage twice – first a decision was taken on the pilot project and later on the expansion of the programme. Thus, what decision qualifies as policy adoption?

As another example, in 2001, the cantons of Jura and Neuchâtel established an intercantonal working group so as to look into the establishment of a joint breast cancer screening programme. In passing the cantonal budget for 2002, the parliament of Jura provided for the necessary programme funds. When the decision in favour of a joint programme was delayed in Neuchâtel for financial reasons, Jura decided in January 2004 to launch the project on its own, with the government mandating the cantonal section of the Swiss pulmonary league with establishing a screening centre. Again, this raises the question as to what decision is the authoritative one – the funding decision by parliament, which was taken in 2001, or the governmental decision to set up the programme, which occurred three years later?

[100] For the relevant sources on this and later examples, see Table 56 and Table 57 in the Appendix.

Below, three conceptual issues are addressed so as to concretise the definition of policy adoption: first, how ***pilot projects*** are dealt with;[101] secondly, how ***other forms of time limits*** imposed on policies are handled; and third, what criteria for determining policy adoption are used if the policy is not enshrined in legislation.

Swiss cantons sometimes test a policy in a small number of municipalities over a limited period of time, before expanding the policy to the entire canton. The breast cancer screening pilots in Vaud are one example of this practice. Because of the close institutional and cultural links between the French-speaking Jura bernois and the canton of Jura, the canton of Bern benefits from a particular opportunity for conducting pilot projects. Provided that Jura has already adopted a policy, Bern can collaborate with the competent authorities from Jura in initiating and testing the policy in its French-speaking district, before deciding about canton-wide adoption. In fact, that is how Bern proceeded in introducing both restaurant food nutrition labelling and its breast cancer screening programme. Do such instances of policy testing qualify as policy adoptions?

6 et al. (2010: 432) point out that two types of ***pilot tests*** exist – true pilot projects, which are policy experiments that do not entail a settled policy commitment, and instances where the term "pilot" is used to describe the first phase of implementation of a settled policy.[102] The distinction made by 6 et al. between ***policy experimentation*** and ***gradual implementation*** is appealing. At first glance, it seems a fruitful avenue to follow for differentiating between more or less authoritative forms of policy decisions. Accordingly, cantons would be coded as adopters as soon as a settled commitment on a policy exists, no matter of whether implementation occurs instantly or gradually. In contrast, true experiments would not qualify as policy adoptions because an authoritative decision on the policy is still pending. However, on closer examination, it transpires that pilot projects in reality might not neatly divide into these two categories. Moreover, secondary sources, as used in this study for collecting data on the dependent variable, often do not provide detailed information on the motivations and intentions of decision makers and thus do not allow for reliable measurement of different types of pilot projects. As a consequence, for the purposes of this study, any authoritative decision to introduce a policy, even if on a trial basis, is defined as policy adoption. Thus, in the first example, Vaud is recorded as having adopted the policy in 1993. Similarly, Bern qualifies as policy adopter even in instances where the policy applies to the Jura bernois exclusively.

Besides pilot projects, other instances of policy making exist that set a ***time limit*** on policies. In Swiss public health policy making, policies are often initiated as part of cantonal action programmes, which have a predefined duration.[103] Such policies may be discontinued at the end of the programme, but may also outlast the programme (or may be extended in the course of programme renewal). Again, the question arises as to whether or not the adoption of a time-limited policy represents an authoritative decision on behalf of that policy. As stated above, policy innovation research is more concerned with the incidence than the permanence of policy change. In line with this perspective, this study seeks to shed light on the impact of policy attributes on the adoption of policies, not on their durability. Hence, it is justified to ignore the eventuality that a policy might be discontinued sooner or later. In any case, the actual life span of a policy does not need to correspond to the original intentions

[101] Pilot testing of policies is probably endogenous to the explanatory models of interest since it is more likely to be used for policies with particular attributes (such as costly or complex policies). In addition, early adopters are more likely to make use of pilot projects.

[102] Framing these issues in terms of the concepts that event history analysis provides, one could argue that the adoption of a policy on a trial basis and the regular adoption of a policy represent two different types of events – i.e. different outcomes of a failure-time process. Hence, cantons that are in the risk set may transition to one of two different states: adoption on a trial basis and regular adoption. As a consequence, one might want to differentiate between these two types of adoption and model decision-making in terms of a competing risks model.

[103] Statutory policies can also be time-limited ("sunset legislation"). This legal practice does not seem to be in much use in cantonal public health legislation, though.

of policy makers. Policies that are enacted without any restrictions in terms of duration or geographical scope may be terminated before long. For these reasons, time limits are treated in the same way as pilot projects, with the passage of a time-limited policy being recorded as an instance of policy adoption.

Besides the enacting of statutory provisions that lay down a particular policy, what other decisions indicate policy adoption? Depending on the cantonal rules for policy making, the policies concerned and the particular circumstances of decision making, authoritative decisions may assume various shapes. By way of example, in several cantons, the health department decided on its own responsibility to introduce restaurant food nutrition labelling. In other cantons, parliament authorised the policy, often by appropriating the funds for more comprehensive action programmes. Against this backdrop, it is impossible to define a universally applicable criterion for policy adoption. At the same time, it is important to measure adoption in a comparable fashion across policies and cantons.

In this study, besides the passage of statutory provisions, other concrete indications of governmental authorisation, e.g. the issuance of ordinances, or parliamentary authorisation, such as appropriation decisions or the adoption of cantonal action programmes, are used.[104] If a succession of decisions exists, the first one marks policy adoption. Thus, in the above example of Jura, the parliamentary appropriation decision in 2001 qualifies as policy adoption, whereas the governmental decision to establish the programme is regarded as the first step in implementation.

In terms of measurement, a few aspects need to be highlighted. Similar to most policy innovation and diffusion research, the time of adoption is measured as the year in which the authoritative decision is made. In the case of policies that are first approved of by cantonal parliament and then accepted in a referendum, the year in which the referendum is held serves as the measure of adoption timing. Secondly, as pointed out before, the year in which an authoritative decision is made is used, even if policy implementation actually starts several years later.[105] For most policies studied, implementation began in the year in which the policy was adopted or in the following year. However, the following example illustrates that policy implementation might occur quite some time after adoption: In 2008, the government and parliament of Solothurn approved a cantonal action programme on healthy body weight, including the introduction of restaurant food nutrition labelling. The process of implementing the label began somewhat later, with a pilot test being launched in 2010 and Solothurn joining the national association that administers the label in 2011. Solothurn is recorded as having adopted the policy in 2008 since an authoritative decision on behalf of the policy was made at that time – even though the process of making the policy fully operational took several years to come.

To conclude with a caveat: Moving beyond an exclusive focus on statutory policies implies that the policy processes studied become more heterogeneous. As a result, measures of policy adoption are possibly not completely comparable across policies.

Policy implementation

Decision makers might attach more importance to the ***actual implementation*** of a particular policy innovation by another government than to the adoption of the policy by that government – especially when the policy at stake is technically complex and/or costly in budgetary terms. For instances of previous implementation demonstrate that the policy of interest – despite the considerable technical and financial demands that it makes – can be put into practice. What is more, instances of previous

[104] In a few instances, the exact information required could be obtained from neither secondary sources nor public officials who were contacted. In those cases, the time of adoption was approximated based on existing information.

[105] Accordingly, for policies that are based on statutory provisions, the date of passage (rather than the date the law comes into effect) is used as the date of reference.

implementation allow later adopters to explicitly study and learn from the experiences that previous adopters have made with *implementing* the policy.

Given that for some of the policies studied several years lie in between the dates of adoption and onset of implementation (see the section above), testing two specifications of the regional diffusion variable – i.e. the ***share of previous adopters*** and the ***share of previous implementers*** – may yield additional insights on what kind of information potential adopters draw on when deciding about innovations. That is why this study also records the year in which implementation began, being defined as the entry into force of statutory policies or the onset of service delivery in the case of non-statutory policies.

Diffusion effects: Overview

Among other things, this study strives to shed light on the impact of policy attributes on the weight of diffusion, understood in terms of previous policy choices made by peer governments ("peer effects"). It does not aim at disentangling the exact diffusion mechanisms at work, though. Thus, peer effects are specified in terms of the channels through which interdependent decision making may occur rather than the mechanisms behind such decision making. Like most other diffusion research, this study uses the share of prior adopters (or implementers, respectively) among a reference group ("peers") as a measure of horizontal diffusion (see Chapter 2.2). Hence, the analysis refrains from opening the ***"black box" of horizontal diffusion*** – it does not uncover what forces cause the observed patterns of interdependent decision making.

Concerning the identification of peer governments, this study draws on the ***CMPH-regions*** (see page 65). CMPH-regions are a likely candidate for channelling interdependent decision making as public health-related networks of government officials (regional conferences) and senior public officials (technical conferences) exist at the regional level of the CMPH (cf. page 55). Information gathered from documents on the individual policies and the visualisation of their patterns of diffusion (see Chapter 5) also suggest that diffusion within these regions is likely to have shaped cantonal adoptions of at least some of the policies studied.

As discussed in Chapter 2.2, neighbouring states might also serve as reference for interdependent decision making. Schaltegger (2004), Kübler and Widmer (2007) and Gilardi and Wasserfallen (2016) observe neighbour-based diffusion among the Swiss cantons. Some neighbouring cantons, e.g. Basel-Stadt and Basel-Landschaft, are known to collaborate in public health and in other policy fields. Moreover, to the extent that interdependent decision making is driven by citizen demands for public policies that exist in other states (cf. Pacheco 2012), the familiarity of citizens with policies in surrounding cantons might bring about ***neighbour-based diffusion***. In principle, mass media allow Swiss citizens to learn about policies that exist in all parts of the country. However, for reasons such as commuter flows, shared media and personal relationships, citizens are likely to be more familiar with policies that are in place in neighbouring cantons. In view of these considerations, neighbour-based diffusion might be expected to have influenced cantonal innovation decisions on the policies of interest. In several instances, the patterns of diffusion revealed in Chapter 5 are also consistent with neighbour-based diffusion. Against this backdrop, both neighbour-based diffusion (defined as the percentage of previous adopters among neighbouring states) and regional diffusion were tested. Since the regional diffusion variables outperformed the neighbour-based one, the presentation of results in later chapters will be limited to regional diffusion effects.[106]

Controlling for ***top-down and national diffusion effects*** requires a somewhat different approach to specification and measurement. Since the basic constellation of the Confederation being superior to the cantons does not change over time and thus does not entail any variation, top-down diffusion effects can only be assessed if federal-government influences that might shape cantonal policy making

[106] For reasons of a succinct presentation, the models that include the neighbour-based diffusion variable will not be shown.

are explicitly identified. Besides the federal level, national intergovernmental associations, such as the Swiss Conference of the Cantonal Ministers of Public Health (CMPH), or parastatal organisations, e.g. Health Promotion Switzerland, may promote the nation-wide diffusion of policies, too.[107] Again, the analysis of such national diffusion effects requires the identification of relevant diffusion stimuli that emanate from such organisations.

In many instances, the federal government and national diffusion agencies use similar means of influence (e.g. technical assistance) to encourage cantonal policy adoptions. Moreover, policy diffusion that is brought about by the federal government or another national organisation likewise represent instances of "***point source diffusion***" (Eyestone 1977: 442): In both cases, the cantons are exposed to nationwide diffusion stimuli that emanate from a single source. (Other diffusion channels, in contrast, entail multiple sources of stimuli for interdependent decision making, e.g. all previous policy adopters in the same region.) Because of the similarity between top-down and national diffusion and for the sake of parsimony, the two diffusion channels will be analysed together, being termed "point-source diffusion" hereafter.

Regional diffusion

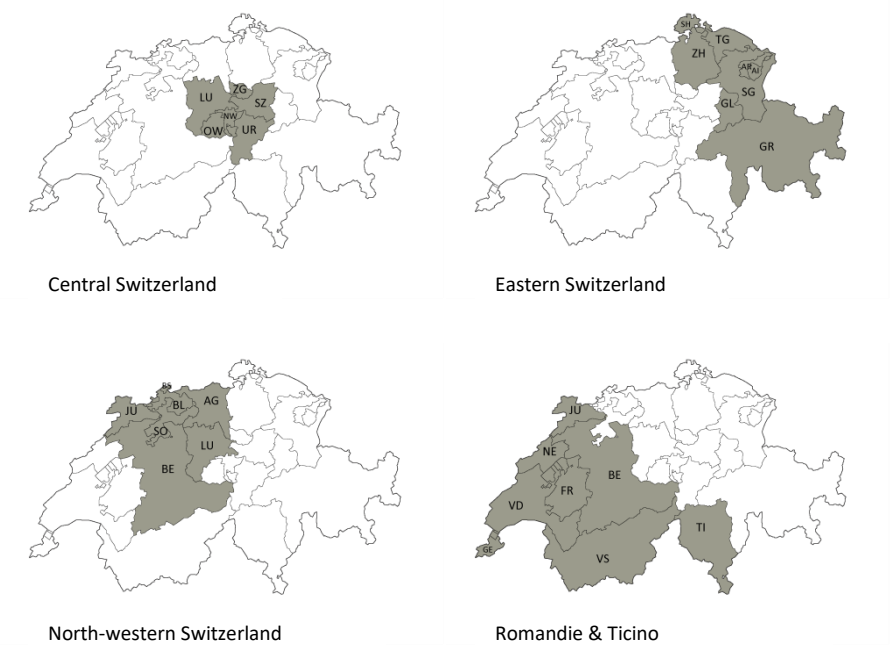
With the regional conferences of the CMPH being founded in the mid-1970s to mid-1980s (see page 56), regional institutions that facilitate intercantonal exchange and joint formulation of health policies have been present over the entire period of cantonal policy making studied here. Among the four regions, the French-speaking cantons and the Ticino clearly suggest that existing networks of cantonal health ministers and public officials respectively promote interdependent decision making on public health. After all, the CLASS set up a permanent commission specifically for the harmonisation of cantonal legislation and the formulation of joint policies in the areas of disease prevention and health promotion (Achtermann/Berset 2006a: 80).

In Central, Eastern and North-western Switzerland, public health issues seem to have been given relatively little formal attention at the governmental level (Achtermann/Berset 2006a: 81-87). Moreover, structures that provide for the exchange on disease prevention and health promotion at the administrative level are less institutionalised than among the French-speaking cantons and the Ticino (see page 56). Still, intercantonal exchange among health ministers, delegates for health promotion or other senior civil servants concerned with public health issues is likely to have promoted policy diffusion in these regions, too.

In short, previous policy adoptions by governments within the same CMPH-region are expected to positively impact on the likelihood of cantonal policy innovation. As indicators of regional diffusion, the ***percentages of previous adopters/implementers among the members of the respective regional conference of the CMPH*** is used (see Figure 8 on the next page).

[107] Relevant parastatal organisations divide into two categories: organisations with a wider mandate that decide to sponsor a specific innovation and organisations that are created specifically with the intention to promote the Swiss-wide adoption of some policy (see Chapter 5 for some examples).

Figure 8: Regional CMPH-conferences



Point-source diffusion

Scholars have shed light on a range of top-down influences, with most research pertaining to federal-government influences on state-level decision making. Research on the impact of state-level action on the innovation decisions of large cities also exists (see page 16). As a basis for detailing the top-down influences that this study will control for, the insights from this body of research are reviewed first. Specifically, the following types of activities or constellations at the higher state level and their potential effects on the behaviour of governments at lower state levels have been examined: the use of ***financial incentives***; the adoption of ***other legal provisions that facilitate or impede innovation***, including ***pre-emptive action***; the transmission of ***policy preferences***; ***political debates*** and ***agenda-setting***; ***policy adoption*** and inversely ***political stalemate***.

Regarding ***financial incentives***, Welch and Thompson's (1980) main finding from an analysis of 57 policies is that incentives greatly increase the speed of diffusion. Moreover, policies with positive incentives mainly account for this difference, while policies with negative incentives diffuse hardly any faster than policies without incentives. Allen et al. (2004) find that federal grant conditions designed to promote the diffusion of truth-in-sentencing laws indeed foster the adoption of such laws. Likewise, Karch's (2006) analysis of state adoptions of individual development accounts reveals a sizable impact of federal fiscal provisions. Here, the federal government does not prescribe such accounts, but identifies them as a legitimate option for the use of federal funds allocated to state welfare programmes. Daley and Garand (2005) focus on the effects of forms of federal funding that are not directly related to the particular programme or programme type being studied, but might still affect state behaviour. According to their findings, the level of spending by the U.S. Environmental Protection Agency allocated to state governments positively impacts on the stringency of state hazardous waste site programmes.

Kim and Jennings (2012) report that the passage of ***federal provisions*** that facilitate the administration of Medicaid managed care programmes and thus lower the obstacles to innovation contributes to the extensiveness of one of two types of managed care programmes studied. This finding matches with evidence from Karch (2006). His study shows that federal legislation that entails strict requirements for state adoption of medical savings accounts and hence increases the obstacles to innovation impedes adoption. Shipan and Volden (2008) focus on statutory provisions that represent the most powerful form of intervention that higher state levels can make use of, i.e. to mandate or prohibit

policy innovation. Specifically, the authors look at the enactment of state-level ***pre-emptive clauses***, which prevent local decision makers from passing antismoking policies. As expected, pre-emption decreases the likelihood of local policy adoptions.

More indirect forms of federal-level action, such as signals about ***policy preferences***, are shown to be influential as well. Thus, in South Korea, the passage of a national act that indicates a strong preference for a pro-natalist policy by the national government encourages municipalities to adopt childbirth support policies (Kim 2013). Policy diffusion among municipalities occurs, although the national act neither requires the latter to take any action nor offers any financial incentives for doing so. While Kim's account represents a case of clear policy signals being sent by the national government, Allen et al. (2004) examine what impact weak signals from the federal government about the desired course of action have. In failing to furnish a newly enacted law on hate crime statistics with effective implementation provisions, the U.S. federal government, Allen et al. (2004: 332) argue, sent an ambiguous signal to the states about the need for action on the policy issue. Accordingly, the federal intervention turns out not to have a significant effect on state policy adoptions.

Several studies address the question of what difference ***national political debates*** and attention to a policy issue by the federal parliament make for state action. According to Karch (2012), the national controversy over stem cell research advances the introduction of related bills in state parliaments. Similarly, Pacheco and Boushey (2014) find Congressional hearings on the public health issues of tobacco and vaccines to exert a positive effect on the number of state bills on tobacco and vaccine regulations. Regarding policy adoption, McCann et al. (2015) discover a contingent effect – federal agenda-setting activities foster policy adoption in states with professional legislatures and strong policy advocates, but fail to do so in other states.

Turning to ***policy adoption at the federal level***, we learn from Grossback et al. (2004) that legislation on sentencing guidelines for the prosecution of criminal offences at the federal level encourages state adoption of similar policies. Focusing on an area of concurrent legislation, Shipan and Volden (2008) show state-level adoptions of antismoking restrictions to lower the likelihood of local action. Finally, what happens if national action clearly is not forthcoming? Allen et al. (2004) find that clear indications of ***political stalemate*** at the federal level may encourage state decision makers to step in. Thus, U.S. states are found to have experienced a significant increase in state adoptions of partial abortion laws in the aftermath of the presidential veto to a decision by Congress to ban such abortions.

In short, research on policy innovation and diffusion provides ample evidence of top-down influences affecting the behaviour of lower-level governments. Moreover, Chapter 4.1 shows that public health policy making in Switzerland is characterised by overlapping federal and cantonal competencies. Against this backdrop, federal activities are likely to have an impact on the processes of cantonal decision making on the six policies studied. Top-down diffusion thus needs to be accounted for in the models on cantonal policy adoptions. In doing so, the focus will rest on the most important forms of influence. Based on the insights from the literature review and on an inspection of actual federal activities in the subfields of public health studied, four potential top-down influences are identified that the explanatory models will control for:

(1) ***financial incentives***;
(2) ***technical assistance***;
(3) ***strong signals about the appropriate course of action***;
(4) ***concrete prospect that federal legislation on a policy issue is forthcoming***.

As pointed out before, apart from the federal government, intergovernmental associations and parastatal organisations at the national level may also act as diffusion agencies, employing any of the factors of influence just listed – except for the fourth one, which is reserved to federal decision makers. With the activities of intergovernmental associations and parastatal organisations being subsumed

under the same list of factors, the term of "***point-source diffusion***" (rather than "top-down diffusion") is used hereafter. Table 8 translates the rather abstract factors of influence into observable activities.

Table 8: Types of point-source diffusion effects considered: operational definitions and expected effects

Factor of influence	*Operational definition*	*Expected effect*
Financial incentives	Dummy = 1 for provision of funding for the particular policy by the federal government or a national organisation	Positive
Technical assistance	Dummy = 1 for provision of technical assistance on behalf of the particular policy by the federal government or a national organisation	Positive
Strong signal about appropriate course of action	Dummy = 1 for federal government signing international treaty that requires adoption of the particular policy	Positive
	Dummy = 1 for explicit endorsement of the particular policy by the Swiss Conference of Cantonal Ministers of Public Health	Positive
Concrete prospect of federal policy making	Dummy = 1 for pending federal bill that includes the particular policy	Negative
	Dummy = 1 for pending popular initiative that entails federal adoption of the particular policy	Negative

In accordance with the findings of the studies cited before (cf. Welch/Thompson 1980; Karch 2006), ***financial incentives*** are expected to increase the likelihood of cantonal policy adoptions. As specified here, this factor captures the provision of funding by federal institutions, parastatal organisations or intergovernmental associations for the policy, lowering the costs of implementation that cantons must shoulder themselves. Grant conditions that make the receipt of federal funds contingent upon the adoption of a particular policy, as frequently studied by U.S. scholars (e.g. Allen et al. 2004), do not exist for the six policies of interest (see Chapter 5).

Considering the complex nature of some of the policies and the activities that diffusion agencies engage in, another potential form of influence suggests itself: the provision of ***technical assistance***. Prospective adopters of a complex policy are likely to be more inclined to consider a policy if services or tools exist that render implementation less complex. At least, this expectation motivates diffusion agencies to provide consultation, training, opportunities for exchange or similar services and to offer such tools as information material, handbooks, software or the like. Technical assistance is thus likely to encourage cantonal policy adoptions.

In line with Kim's research (2013), ***strong signals about what constitutes the appropriate course of action*** on a particular issue are hypothesized to render cantonal policy innovation more likely. For such signals should strengthen the political clout of policy proponents at the cantonal level. A survey of activities in the policy field yields two situations that might entail such strong signals – the federal government signing an international treaty that stipulates the adoption of the policy of interest, and the Swiss Conference of the Cantonal Ministers of Public Health explicitly calling upon cantons to adopt a particular policy. Both situations are likely to convey a sense of what policy solutions are considered appropriate, based on national or even international consensus, and thus to encourage cantonal adoptions of the innovative policy. Federal and national actors communicate their policy preferences also in many other, less compelling ways. However, such messages are unlikely to significantly alter the motivations, obstacles or resources that determine the whether and when of cantonal policy innovation (cf. Allen et al. 2004).

Regarding the impact of ***federal legislation***, this study departs from the assumption that for cantonal innovation decisions the ***prospect of federal action*** on a policy issue is more relevant than indications of political stalemate (for the latter, see Allen et al. 2004). More specifically, the concrete prospect that the federal government is about to adopt a particular policy is conjectured to discourage the

cantons from adopting a similar policy. This expectation rests on two considerations. First, because of the precedence of federal over cantonal law, federal legislation may vitiate previous cantonal policy choices. Hence, with federal policy making being underway, the cantons have little incentive to act themselves. Secondly, the policy-making capacities of most cantons are relatively limited (cf. Chapter 4.1). Once a federal policy solution in a particular area is in the offing, cantonal decision makers are therefore likely to concentrate on other matters.

Nota bene, prospective federal action might have the opposite effect. With a federal decision being imminent, the cantons might decide to make the first move and innovate before the federal level can do so – either to forestall federal action and thus safeguard cantonal competencies or to produce a fait accompli as a means of directing federal policy making towards the policy solution preferred by the respective canton. Being involved in federal policy making through the institutions of vertical federalism, cantons have more direct means of shaping federal legislation, though.

In terms of measurement, pending bills and popular initiatives that aim at federal-level adoption of the policy are taken as indicators of federal action being under way. In contrast, declarations of the intention to act on an issue, such as the approval of a parliamentary motion or initiative or the designation of federal policy adoption as one of the objectives of national prevention programmes, are not considered as signs of imminent federal action. Because of the many veto players in the Swiss political system, it is uncertain whether and when such declarations of intent can be translated into concrete action.

Stalemate at the federal level might prompt cantonal decision makers to step in and pass own legislation. But the incapacity of the federal government to resolve a policy issue is also a sign of the issue being contentious. Therefore, federal stalemate is not assumed to prompt cantonal policy adoptions.

Dummy variables are used to measure the various forms of point-source diffusion.[108] "Financial incentives", "technical assistance" and "strong signal about appropriate course of action" are coded 1 from the year of first occurrence onwards throughout the entire period that they persist.[109] All remaining years are coded 0. "Concrete prospect of federal policy making" is coded 1 from the time onwards when the federal bill is tabled, i.e. the beginning of the pre-consultation phase[110], or the popular initiative is filed until a vote on the bill or initiative is taken.

As a final note: Some forms of top-down influence discussed in the literature are not considered in this study, with federal mandates and pre-emption being the most important ones. They are disregarded since during the period of observation the Confederation neither required the cantons to adopt any of the six policy innovations studied nor prevented them from doing so.

[108] Dummy variables are commonly used in research on top-down influences. Yet, it cannot be ruled out that unobserved factors that coincide with the event that is captured by the respective dummy cause the observed pattern. This must be kept in mind in interpreting the estimated effects.

[109] More precisely, if the respective factor of influence emerges in the first three months of the year, the year is coded 1, based on the assumption that cantons might still respond to it in the same year. In case the financial incentive, technical assistance or the signal about the appropriate course of action occurs in April or later, only subsequent years are coded 1. Given that cantonal decision-making processes take some time to unfold, it is assumed that the impact of such influences will materialise no sooner than in the next year or later.

[110] In Swiss legislative processes at the federal level, pre-consultation precedes parliamentary debate of draft laws (Vimentis 2015a). During pre-consultation, the Federal Council invites political parties, interest groups and cantons to comment on a bill. Often, the bill is adjusted in response to the statements received before it is submitted to the Federal Assembly (Vimentis 2015a).

5 Policy Portraits: Content, Characteristics, Context and Diffusion

Chapter 5 describes the six policies studied. For each policy, it outlines the following aspects: (1) the core content of the policy; (2) the background to policy adoption by the pioneering canton; (3) the ensuing pattern of diffusion; (4) variations in policy design across cantons; (5) the design and characteristics of the policy; and (6) the federal and national context of cantonal policy innovation. In doing so, the various sections furnish background information, supply the operational definitions of key explanatory variables and derive the measures of the point-source diffusion variables. For the sake of providing an up-to-date picture, this chapter traces the patterns of diffusion as well as federal and national developments into 2015. Note that the analyses carried out in Chapter 7 and Chapter 8 look at the period until 2013.

Chapter 5 is divided into five subchapters, each of which is dedicated to one (or two) particular policies. The first subchapter focusses on the ban on tobacco billboard advertising, while the second one discusses the ban on tobacco sales to children and adolescents. The third subchapter outlines both the restriction on alcohol sales at petrol stations and the ban on takeout alcohol sales at night-time. The two policies are presented together because they both entail alcohol sales restrictions and their scope partly overlaps. Furthermore, due to the small number of cantonal adoptions of both policies, there is less information to convey about them. The following subchapters deal with breast cancer screening programmes and healthy nutrition certification programmes for catering facilities.

5.1 Ban on Tobacco Billboard Advertising

Policy name and core content

In designating the policy described below, various terms might be used, including “ban on billboard advertising”, “ban on outdoor advertising” and “restrictions on advertising in the public space”. Each of these designations captures an important aspect of the policy, while neither of them reflects all variants of existing cantonal policy designs. Here, mainly the first term is used since it encapsulates the core content of the policy, which is invariant across adopters, i.e. the prohibition of billboard advertising for tobacco products. As the other two designations indicate, the basic idea of the policy is to banish tobacco advertising from outdoor spaces, or, more precisely, from places that are accessible or visible to the public.

First adoption[111]

On 9 June 2000, Geneva was the first canton to adopt the ban on tobacco billboard advertising.[112] Somewhat surprisingly, policy adoption by the pioneering canton was the by-product of a legislative reform in a policy field that is only marginally related to public health. More specifically, Geneva adopted the policy in the course of a total revision of its advertising legislation. Prompted by a ruling by the cantonal administrative tribunal that highlighted shortcomings in existing regulations, the canton embarked on a legislative reform that was to replace the fragmented statutory provisions on advertising with a comprehensive law, to delegate the competence to authorise billboard advertising to the municipalities and to expand the regulatory framework to advertising on private ground if visible from public ground. Since the original legislative goals had no relation with public health concerns, the bill drafted by the cantonal government did not regulate tobacco advertising at all. However, during the parliamentary commission’s consultation of the bill, the *Alliance de Gauche*, a left-wing

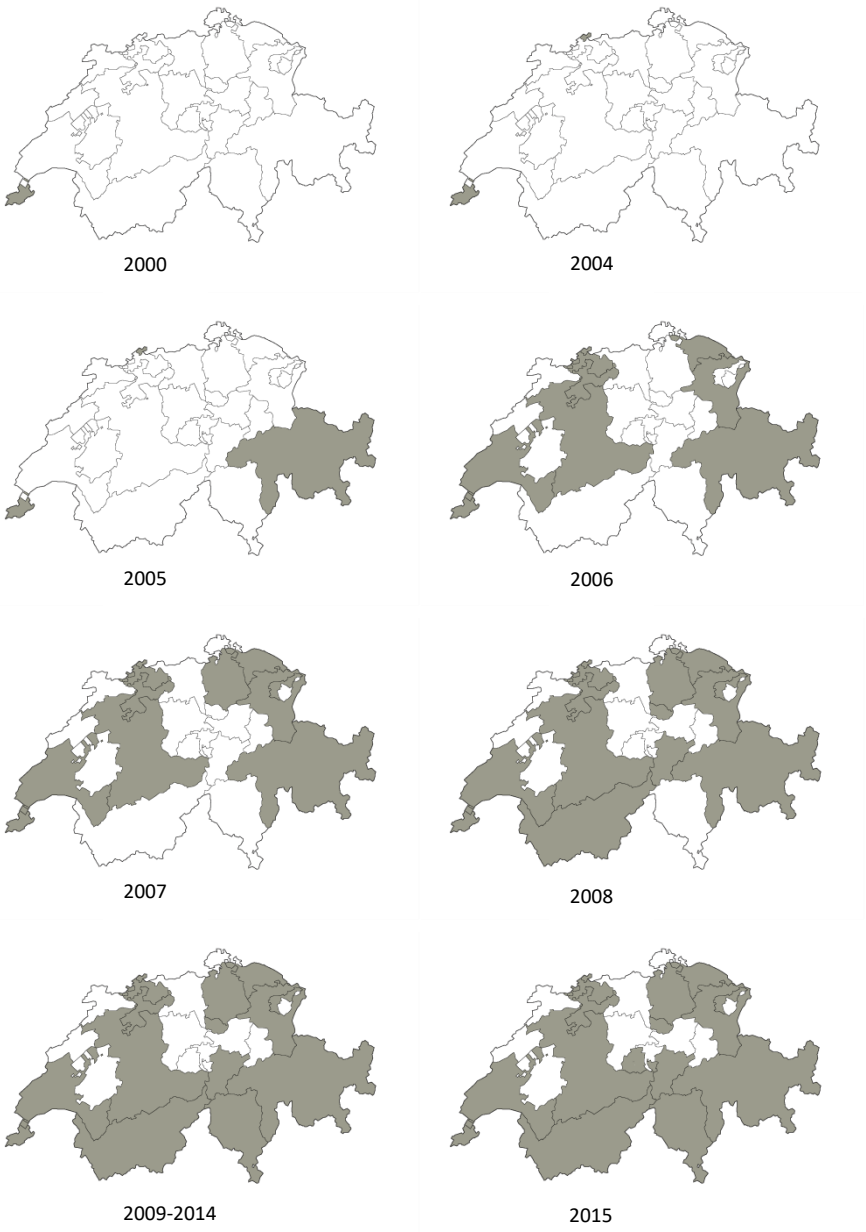
[111] This account is based on the verbatim records of the parliamentary consultation of the relevant act in Geneva (Grand Conseil de Genève 1999, 2000a, 2000b, 2000c).

[112] In 1988, Vaud had included into its advertising act a clause that authorised the cantonal government to prohibit advertising for tobacco (and spirits) in the public space. However, this discretionary clause was never made use of. Tobacco outdoor advertising was effectively prohibited in Vaud in 2006 after a revision of the advertising act had been undertaken.

parliamentary group, seized the opportunity and proposed banning billboard advertising for tobacco (and alcohol) as an amendment to the draft law. In the ensuing parliamentary debates, this amendment was contested and also the cantonal government had some reservations about it. It cautioned that the provision might encroach upon economic freedoms as guaranteed by the Swiss federal constitution and might conflict with the precedence of federal jurisdiction in the areas of tobacco and alcohol regulation. Nevertheless, the cantonal parliament voted in favour of the policy.

Pattern of diffusion[113]

Figure 9: Ban on tobacco billboard advertising: pattern of diffusion, 2000 to 2015



Source: Own illustration; for data sources see Table 50 in the Appendix.

Following the first cantonal adoption, a number of associations and companies from the advertising, beverages and tobacco industries appealed against the advertising ban at the Federal Supreme Court, with the lawsuit being filed in September 2000. In March 2002, the Federal Supreme Court ruled that

[113] Table 50 in the Appendix lists the dates of cantonal policy adoptions and the sources that inform the following description.

the policy did not violate any constitutional provisions (Tribunal fédéral 2002). With the policy being subjected to judicial review, it did not spread in the early 2000s. Four years passed until the second canton (BS) adopted it, with Graubünden following in 2005. Between 2006 and 2009, the number of adopters increased considerably, as Figure 9 on the previous page shows. However, after 2009 policy diffusion came to a temporary halt, with the total number of adopters levelling off at 15. In late 2015, Obwalden became the 16th canton to adopt the ban on tobacco billboard advertising. As regards the pattern of diffusion, it is noteworthy that the first two cantons to emulate the policy were neither neighbours of nor belonged to the same CMPH-region as Geneva. As a result, from 2005 onwards, the advertising ban was present in three out of four CMPH-regions, which might have fostered its diffusion in the following years. In 2008, the policy reached Central Switzerland, the fourth CMPH-region. While an analysis of the cantonal characteristics that shaped policy adoption will be saved for Chapter 7.1, it is interesting to note that the non-adopters in 2015 include the three most important tobacco-manufacturing cantons (JU, LU, NE) and the largest tobacco-growing canton (FR).

Variations in cantonal policy designs[114]

In describing variations in cantonal policy designs, four aspects deserve particular attention: (1) the spatial scope of the policy; (2) the means of advertising that the policy prohibits; (3) the means or locations of advertising exempted from the prohibition; and (4) the coverage of indirect means of advertising.[115]

As regards the spatial dimension, all adopters cover the public space in the strict sense, i.e. areas that are universally accessible. Hence, all adopters prohibit tobacco adverts on public ground, such as roads, roadsides, squares and parks. In addition, in all cantons except for Zurich, the advertising ban applies to private ground if visible from public ground. Often, the policy also pertains to quasi-public places, i.e. buildings and premises in the possession of the canton or other public-law corporations that are open to the public, but where access is more restricted than to the public ground. Public-administration buildings, schools and hospitals are examples of such places. Thus, several cantons explicitly prohibit tobacco advertising inside and outside public buildings and other facilities that are owned by the canton, the municipalities or public-law corporations or foundations. For two reasons it can be difficult to infer from the relevant passages in legal texts what quasi-public places exactly are covered, though. First, the meaning of terms such as “public buildings” or “public sites” is not always specified and may differ between cantons. Secondly, at least in some cantons, the advertising ban covers public buildings or premises, even if the legal text does not explicitly say so.[116] Finally, in banning tobacco commercials from sports facilities/events (AR, SG, SO, VS, ZH), movie theatres/cinema shows (SG, SO, VS) or cultural venues/events in general (SO, VS, ZH), some cantons extend the scope of application of the policy beyond public or quasi-public places, having thus reinvented the policy.

In terms of the means of advertising prohibited, eight cantons ban tobacco advertising in the public space generally. Seven cantons (BL, BS, GE, OW, TG, UR and ZG) prohibit billboard advertising only, while ZH bans billboard advertising and all forms of advertising that are visible from a distance. Typical exemptions from the advertising ban include company nameplates and store window displays (or more generally point-of-sale advertising). Three cantons do not limit themselves to regulating direct means of tobacco advertising in the public space, but also deal with the issue of event sponsorship, i.e. a more indirect form of product promotion. Among these cantons, Solothurn adopts the most rigorous

[114] This section is based on an analysis of the legal documents referred to in Table 50.

[115] Cantonal policy designs also differ with regard to the range of psychoactive substances that the advertising ban pertains to. Besides tobacco, most adopters ban outdoor advertising for alcohol in general or for certain types of alcoholic beverages.

[116] For example, Thurgau does not refer to public buildings or sites in the relevant legal norm. However, the message by the cantonal government that accompanied the draft law states that the advertising ban applies to buildings that serve public purposes and facilities that are owned by the canton, the municipalities and other public-law institutions (Regierungsrat des Kantons Thurgau 2005).

approach, completely prohibiting event sponsoring. Ticino allows for the sponsoring of temporary events (other than sports events and events that target minors) by way of an exception, whereas Valais stipulates that event sponsors have to comply with directives formulated by a specialised executive commission.

Policy design and characteristics[117]

The ban on tobacco billboard advertising aims at reducing the appeal of smoking. Its objective is embedded in the more general goals of tobacco prevention policy, i.e. to prevent the initiation of smoking, to facilitate its cessation and ultimately to reduce smoking-related diseases. As a means of accomplishing its objective, the policy prohibits the placement of billboards that advertise tobacco products on public ground and on private ground that is visible from public ground. Similar to other advertising restrictions, it thus intends to prevent the tobacco industry from associating smoking with values that have a positive connotation. The policy is based on a regulatory tool, which directly targets the behaviour of the tobacco industry and of brokers of advertising space. The general population constitutes the indirect target group. Policy implementation (authorisation of adverts, granting of concessions, enforcement and sanctions) usually resides with municipal administrations, with the cantons assuming oversight responsibilities. Table 9 summarises the policy design.

Table 9: Ban on tobacco billboard advertising: components of the policy design

Objective	Reducing the force of attraction of smoking
Tool	Prohibition
Action content	Prohibition of the placement of tobacco billboards on public ground and on private ground visible from public ground
Direct target group	Tobacco industry; brokers of advertising space
Indirect target group	Entire population
Delivery system	Municipal/cantonal administrative units

In policy debates, proponents of the ban on tobacco billboard advertising regularly point out that adolescents are particularly susceptible to advertising and that most smokers start smoking at a young age. The need for youth protection is thus often used as an argument in favour of the policy (e.g. Grand Conseil de Genève 2000a). As the ban reduces the exposure of the entire population to tobacco advertising, the designated beneficiaries extend beyond children and adolescents, though (see Table 10 on the following page for a summary of the characteristics of the policy design).

The ban on tobacco billboard advertising proscribes a particular activity and includes provisions for enforcement (prohibition and removal of adverts that violate the law) and sanctions (mainly monetary fines). It is thus highly coercive. Since tobacco advertising is likely to shape the overall demand for tobacco products and to influence the market share of individual brands, it represents an important activity to tobacco manufacturers. The ban on tobacco billboard advertising removes the availability of one means of advertising, it does not suppress tobacco advertising as such, though. Similarly, the ban intrudes into the core business of brokers of advertising space, but it does not affect the sale of advertising space in a fundamental way. Rather, it eliminates the demand for a specific type of advertising space (i.e. billboards) by a specific group of clients (i.e. tobacco companies and, in several cantons, the alcohol industry or at least certain alcohol producers). Hence, whether assessed from the perspectives of tobacco companies or the advertising sector, the policy entails an upper medium level of intrusion. Aggregating across the two dimensions, the ban qualifies as a highly interventionist policy.

The policy consists of a single measure, which features a regulatory norm. As the latter plainly prohibits tobacco billboard advertising, it is enshrined in one or two single sentences in the pertinent cantonal acts. In the corresponding ordinances, few, if any, implementation rules are specified. Advert

[117] Unless otherwise noted, the information presented here draws on the same sources as detailed in Table 50 in the Appendix.

placements in the public space are subject to authorization by the competent state agency, regardless of whether or not tobacco billboards are forbidden. Hence, no new delivery structure has to be created for policy implementation. The narrow scope, low level of calibration and high level of automaticity translate into a simple policy design.

The costs associated with implementing the advertising ban are not separately disclosed in cantonal budgets; they are absorbed into general staff expenditure categories.

Table 10: Ban on tobacco billboard advertising: characteristics of the policy design

Policy characteristic	*Dimension*	*Value*
Designated beneficiaries	-	**More comprehensive than age group of children/adolescents**
Degree of intervention	Coerciveness	High
	Intrusiveness	Upper medium
	Overall	**High**
Complexity	Scope	Narrow
	Calibration	Low
	Automaticity	High
	Overall	**Low**
Implementation costs	-	**Invisible**

Federal and national context[118]

At the federal level, two restrictions on tobacco advertising exist, i.e. the prohibition of radio and TV commercials and the ban on advertising targeted at children and adolescents (see Table 11 on the next page). So far, no federal ban on billboard advertising has been passed, although several attempts at nationwide regulation have been made over the past two decades. In 1993, a popular initiative that required a complete ban on tobacco advertising was voted on. The Federal Council, which opposed a complete ban, drafted an indirect counterproposal[119] that entailed a ban on billboard and cinema advertising instead. Neither policy proposal was endorsed, though. Whereas the Federal Assembly decided not to pursue the indirect counterproposal, the people rejected the popular initiative. Between 1998 and 2006, members of the National Council launched a number of motions and parliamentary initiatives with the intention to prohibit tobacco advertising on billboards, in the public space or in general. These efforts have not yet led to actual policy change, though. The relevant motions, i.e. mandates directed at the Federal Council to prepare draft legislation, were made into postulates, which are less authoritative in nature. Further, none of the parliamentary initiatives, which would have enabled the Federal Assembly to draft legislation itself, was pursued by the National Council. When commenting on the parliamentary initiatives and motions and on several other occasions, the Federal Council expressed its support for further federal restrictions on tobacco advertising and its willingness to consider tabling the required adjustments to the Federal Food Act. However, for many years, policy proposals for advertising restrictions did not find their way into draft legislation. In May 2014, this changed when the pre-consultation of the Tobacco Products Act began.[120]

[118] Unless otherwise noted, this section is based on the information compiled in Table 51 in the Appendix.

[119] An indirect counterproposal suggests the modification of existing or the adoption of new laws in a way that reflects the policy change intended by the initiators of a popular initiative, but is less extensive in scope. The indirect counterproposal automatically enters into force if the respective popular initiative is rejected by the people (Vimentis 2015b).

[120] The need for a specific act on tobacco products became apparent in 2009 in the course of the total revision of the Federal Food Act, which was to bring Swiss food legislation in line with EU law (BAG 2014b). Since EU regulations do not allow for tobacco products to be treated as food items, the Federal Council announced in the report that was issued in July 2009 for the pre-consultation of the revised Federal Food Act that a separate act on tobacco products would be drafted (Bundesrat 2009c: 25-26). Hence, the new Federal Food Act, which was adopted in June 2014, no longer regulates tobacco. In order to allocate sufficient time for the drafting and adoption of the Tobacco Products Act a temporary provision was enacted that stipulates that the tobacco-related

Among other things, the bill proposes to prohibit tobacco billboard advertising, all other forms of outdoor advertising that are visible from public ground, tobacco advertising in public buildings and on their premises, in means of public transport, at sports facilities/events and in cinemas as well as the sponsoring of international events (Bundesrat 2014). Thus, the bill takes up many elements that are nowadays entailed in cantonal legislation. It does not cover advertising on private ground, though. Due to Art. 17 of the bill, which allows for further cantonal restrictions, the adoption of the new federal act would not affect cantonal prohibitions of tobacco advertising on private ground, though.

Table 11: Federal tobacco advertising restrictions

Regulation	*Description of content*
Ban on tobacco advertising on radio and TV	▪ Ban on tobacco advertising on radio and television ▪ Ban on sponsorship of radio and TV programmes by tobacco companies
Ban on tobacco advertising targeted at minors	▪ Ban on tobacco advertising targeted at minors; ban explicitly covers: - advertising at places frequented by minors, - advertising in newspapers, magazines or other publications that address minors; - advertising on school equipment; - advertising materials given free of charge to minors; - advertising on toys; - free-of charge dissemination of tobacco products to minors; - advertising at cultural, sports or other events frequented by minors.

Source: Own compilation based on BAG (2015b).

In June 2004, the Federal Council signed the Framework Convention on Tobacco Control of the World Health Organization (WHO FCTC) (BAG 2014a). In Art. 13, the WHO FCTC requires a complete, or at least as complete as possible, ban on tobacco advertising, promotion and sponsorship (WHO 2003: 11-12). Since 2004, the federal government has continually expressed its intention to ratify the convention (BAG 2008b: 35; BAG 2012: 11), emphasising that the adoption of additional, nationwide advertising restrictions is a prerequisite for doing so. The adoption of the convention by the WHO in 2003 and its signing by the Swiss federal government in 2004 might have sent a clear signal to cantonal decision makers about the legitimacy and desirability of tobacco control policies, including restrictions on advertising. In view of the parallel federal and cantonal competencies for tobacco regulation, the intended ratification does not depend on cantonal action. As a matter of fact, federal authorities have been aiming at the passage of federal legislation, with draft legislation finally being submitted in 2014. Nonetheless, the message about the desired course of action in tobacco control policy might well have encouraged cantonal decision makers to legislate on the issue – in particular when it became evident that federal legislation was not forthcoming. Moreover, the National Tobacco Programmes (NPT) 2008-2012 and 2008-2016, the latter of which is also endorsed by the CMPH, call upon the cantons to make use of their legislative competencies so as to effectively restrict tobacco advertising (BAG 2008b: 36; BAG 2012: 12).

As the main source of federal funding on tobacco control policies, the Tobacco Prevention Fund (TPF) has provided the cantons with significant resources for the implementation of cantonal tobacco prevention programmes since 2012. In order to obtain such grants, the cantons have to incorporate regulatory measures in the areas of health protection or market regulation into their programmes (TPF 2011). Yet, the cantons are free to decide what kinds of regulatory measures they adopt (e.g. smoke-free schoolyards) and they can probably also refer to already existing legal provisions. Against this backdrop, TPF financing is unlikely to have had a noticeable impact on cantonal adoptions of the ban

provisions of the former Federal Food Act stay in force until the new tobacco legislation takes effect (Bundesrat 2009c: 25-26). The final vote on the draft Tobacco Products Act was envisaged to take place in late 2016 (BAG 2014b).

on tobacco billboard advertising. Furthermore, during the observation period, no other federal, intergovernmental or parastatal organisation provided financial incentives or technical assistance related to the policy. Based on this description of the federal and national context of cantonal policy making and the specification of diffusion variables in Chapter 4.3, the measures of point-source diffusion between 2000 and 2013, i.e. the actual period of analysis for this policy, can be derived – see Table 12.

Table 12: Ban on tobacco billboard advertising: coding of point-source diffusion variables, 2000-2013

Factor of influence	*Coding of variable*	*Justification*
Financial incentives	2000-2013: 0	No provision of either positive or negative financial incentives
Technical assistance	2000-2013: 0	No provision of technical assistance
Strong signal about appropriate course of action	2000-2004: 0	No such signal
	2005-2013: 1	Signal inherent to signing of WHO FCTC
Clear prospect of federal policy making	1990-1993: 1	Popular initiative filed and finally voted on
	1994-2013: 0	No federal bill tabled or popular initiative filed

5.2 Ban on Tobacco Sales to Children and Adolescents

Policy name and core content

In Vaud, the canton that pioneered the policy in Switzerland, the relevant legal provision is entitled "ban on tobacco sales to minors". Here, the slightly wider term "ban on tobacco sales to children and adolescents" is used since some cantons set the minimum age for tobacco purchases at 16 years rather than at Swiss legal age (i.e. 18 years).[121] The policy entails the prohibition to sell cigarettes and other tobacco products to children and adolescents. In order to cover all sales channels and more effectively limit the access of young people to tobacco, restrictions on tobacco sales from vending machines typically complement the minimum age requirement.

First adoption[122]

On 31 May 2005, the canton of Vaud was the first jurisdiction to enact a minimum age for tobacco purchases. Similar to the adoption of the ban on tobacco billboard advertising in Geneva, policy change occurred during a comprehensive revision of the legal foundations of an issue area different from public health. In January 2005, the government submitted a bill to the cantonal parliament that was to modernise the commercial inspectorate system of the canton. The legislative reform aimed at integrating cantonal and municipal commercial registers and at harmonising them with the federal register, at revising the cantonal provisions on economic activities subject to authorisation and at reorganising cantonal and municipal responsibilities for the surveillance of economic activities. The draft legislation suggested a modification of the existing provisions on tobacco vending machines, i.e. to restrict the installation of vending machines to the interior of establishments (e.g. restaurants or bars), where they are under surveillance. Given the voluntary practice of refraining from tobacco sales to minors that some retail businesses in Vaud adhered to at the time, this provision was to further limit the access of children and adolescents to tobacco products. While the bill did not contain an actual ban on such sales, the proposed regulation of the placement of vending machines paved the way for the insertion of the ban into the act. During the first parliamentary debate, a delegate of the *Parti*

[121] These cantons use the federally required minimum age of 16 years for purchasing beer and wine as a point of reference.

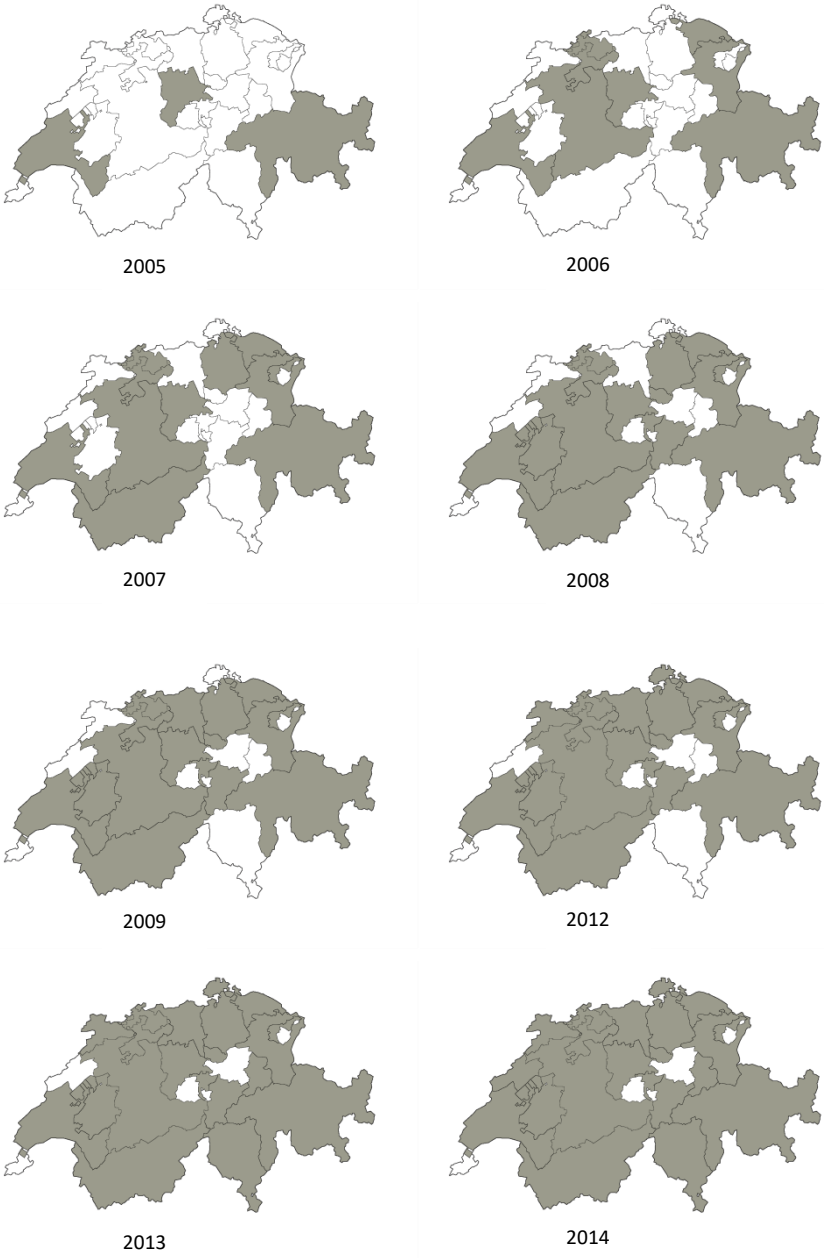
[122] This account draws on the bill and the accompanying message by the cantonal government of Vaud (Conseil d'Etat de Vaud 2005), the report of the parliamentary commission (Grand Conseil de Vaud 2005) and the (unpublished) verbatim records of the parliamentary sessions.

socialiste proposed an amendment banning tobacco sales to minors, arguing that the restrictions on tobacco vending machines otherwise did not serve much purpose. After heated debates and votes taken on proposals to reject the amendment and to lower the minimum age to 16 years, the parliament adopted the ban on tobacco sales to minors in the final vote on the law in May 2005.

Pattern of diffusion[123]

Figure 10 shows a pattern of fast diffusion of the ban on tobacco sales to children and adolescents. In 2005 already, two more cantons (LU, GR) followed the lead of Vaud and by the end of 2007 almost every second canton had adopted the policy. When the year 2015 drew to a close, the number of adopters had reached 23. In comparing the diffusion of the policy across CMPH-regions, it transpires that the ban spread faster in North-western and Eastern Switzerland than in the Romandie & Ticino and in Central Switzerland where the territorial expansion occurred in a more staggered way.

Figure 10: Ban on tobacco sales to children and adolescents: pattern of diffusion, 2005 to 2015



[123] See Table 52 in the Appendix for the exact dates of cantonal policy adoptions and the relevant legal sources.

Figure 10: Ban on tobacco sales to children and adolescents: pattern of diffusion, 2005 to 2015 (continued)

2015

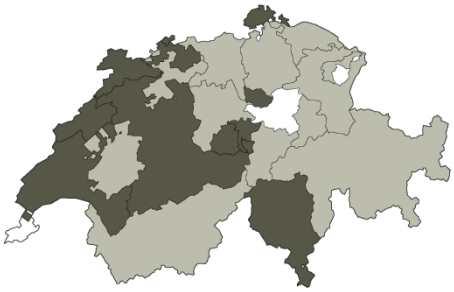
Source: Own illustration; for data sources see Table 52 in the Appendix.

Variations in cantonal policy designs[124]

Policy designs differ mainly with regard to four aspects: (1) the minimum age set for purchasing tobacco; (2) the existence of tobacco vending machine restrictions; (3) extensions to the scope of the ban; and (4) the enactment of implementation provisions designed to render the ban on tobacco sales to children and adolescents more effective.

To begin with the minimum age requirements, besides Vaud, ten more cantons fix the legal age for tobacco purchases at 18 years. The remaining 12 adopters choose 16 years as the minimum age (see Figure 11).

Figure 11: Minimum age for tobacco purchases by canton, 2015



Legend: 16 years (light grey); 18 years (dark grey); white: no minimum age.

Except for Fribourg and Glarus, all adopters explicitly regulate tobacco vending machines in some way. No canton bans such machines, though. Most cantons simply stipulate that adequate measures must be taken so as to prevent children' and adolescents' access.[125] In a few cantons, somewhat more restrictive provisions exist. Vaud and Neuchâtel stipulate that vending machines must be placed indoors and be under surveillance of the management and staff of the respective establishment. Jura also requires tobacco vending machines to be under permanent surveillance. The rationale behind these restraints is to ensure a level of control exercised over sales from vending machines that is similar to that prevailing in over-the-counter sales.

As regards the scope of the policy, most adopters confine themselves to prohibiting tobacco *sales* to children and adolescents. A few cantons, however, aim at preventing any *dissemination* of cigarettes and other tobacco products to those younger than 16 or 18 years, whether for money or for free. Accordingly, Aargau, Bern and Zurich prohibit the sale and any other form of dissemination

[124] This section is based on an analysis of the relevant text passages of the legal documents listed in Table 52.

[125] Vending machine operators and the hospitality industries have devised various such measures. Besides the surveillance of tobacco vending machines, the latter may be furnished with locking devices that prevent tobacco purchases unless unlocked through the insertion of a token or manipulation of a remote-control mechanism. Alternatively, machines may be endowed with an age verification device.

("*Weitergabeverbot*") and sanction anybody (other than parents) who makes tobacco available to children and adolescents. Vaud does not go quite as far, but stipulates that tobacco purchases are banned if surmised to be occurring on behalf of minors. Finally, five cantons (AG, BL, BS, OW, VD) establish in their pertinent acts and ordinances the legal foundations for tobacco test purchases as a means of monitoring compliance with the underage sales restrictions.[126]

Policy design and characteristics[127]

The ban on tobacco sales to children and adolescents aims at restricting the access of young people below a certain age to tobacco products and thus at preventing them from starting to smoke. It is based on a regulatory tool that prohibits underage tobacco sales and stipulates certain requirements for the operation of tobacco vending machines. The direct target group consists of retail businesses, operators of tobacco vending machines and the management and staff of establishments that have a vending machine on their premises. Children and adolescents are the indirect target group of the policy. Depending on the intracantonal division of tasks, cantonal and/or municipal administrative units are in charge of policy delivery (i.e. granting licences for tobacco sales and for the installation of vending machines, inspection of retail businesses, test purchases, sanctions).

Table 13: Ban on tobacco sales to children and adolescents: components of the policy design

Objective	Preventing young people from smoking
Tool	Prohibition
Action content	Prohibition of tobacco sales to children and adolescents; restriction on tobacco sales from vending machines
Direct target group	Tobacco retail businesses; vending machine operators; management and staff of establishments with tobacco vending machines
Indirect target group	Children/adolescents
Delivery system	Cantonal/municipal administrative units

The policy design clearly designates children and adolescents as the beneficiaries since the sales ban pertains to this age group only.

The ban on tobacco sales to children and adolescents entails a high level of coerciveness, as it prohibits a particular activity (i.e. underage tobacco sales) and arranges for enforcement (inspection of establishments) and sanctions against violations of the regulatory norm (i.e. monetary fines). Tobacco sales are the primary or an important activity of several types of retail shops (e.g. tobacconists, kiosks, petrol station shops, supermarkets). Being limited to a relatively small segment of clients (i.e. those below 16 or 18 years, respectively), the policy restrains, but does not suppress tobacco sales. Hence, it exerts an upper medium level of intrusion. Overall, the ban represents a highly interventionist policy.

[126] Several cantons that have not enshrined test purchases in their legislation also carry out such purchases.

[127] The sources that were used to extract the policy design and its characteristics are given in Table 52 in the Appendix. The description in the below section focuses on the ban as such, disregarding the ancillary measure of test purchases. This is because the cantons may adopt the ban on tobacco sales to children and adolescents without carrying out any test purchases. For cantons that provide for test purchases, the delivery system differs in one respect from the one laid out in Table 13: non-governmental organisations are part of the system. Since public officials cannot carry out test purchases themselves, they rely on non-profit organisations, which recruit, train and accompany the teenage test buyers. Test purchases render the design more complex (Table 14). To begin with, test purchases might be considered as a measure in their own right. Moreover, given that test purchases are designed to elicit an illegal behaviour and deploy adolescent test buyers for that purpose, they are sensitive in legal and political terms. Detailed implementation rules are therefore usually specified (cf. EAV/BAG 2010).

Table 14: Ban on tobacco sales to children and adolescents: characteristics of the policy design

Policy characteristic	*Dimension*	*Value*
Designated beneficiaries	-	**Children/adolescents**
Degree of intervention	Coerciveness	High
	Intrusiveness	Upper medium
	Overall	**High**
Complexity	Scope	Narrow
	Calibration	Low
	Automaticity	High
	Overall	**Low**
Implementation costs	-	**Invisible**

The ban on tobacco sales to children and adolescents represents a single measure, which, depending on the canton, comprises one or two related regulatory norms (i.e. ban on underage tobacco sales, restriction on tobacco sales from vending machines). The level of calibration is low, with the action content being encapsulated in one or two short legal provisions and hardly any implementation rules being detailed. Tobacco sales fall into the category of economic activities that require a licence. Thus, cantonal and/or municipal administrative units exist that grant tobacco sales licences, inspect retail shops and vending machines and sanction illegal tobacco sales. No new delivery structure has to be set up for these activities. Overall, the policy design is simple.

Implementation costs remain invisible since cantonal budgets do not contain a specific budgetary item on the policy.

Federal and national context

Besides the stipulation of a minimum pack size of 20 cigarettes, current federal legislation does not provide for any youth access restrictions (cf. BAG 2015b). Since the submission of the first postulate in 1996, several attempts have been made by members of the Federal Assembly at enacting a federal ban on tobacco sales to minors (see Table 53 in the Appendix). Yet, like the advertising ban in the public space, such a ban was included in draft legislation only in May 2014 as part of the proposed Tobacco Products Act, the final vote on which was foreseen to take place at the end of 2016 (BAG 2014b). Art. 18 of the bill prohibits the sale and other forms of dissemination of tobacco to minors and stipulates that vending machines must prevent minors' access (Bundesrat 2014). Moreover, the bill establishes a federal statutory basis for test purchases, specifying the requirements that need to be met so that the results of such purchases can be used in administrative and criminal procedures (Bundesrat 2014). Thus, the draft legislation emulates the example of those cantons that have enacted more stringent legislation.

The WHO FCTC, which Switzerland signed in 2004, contains a provision that requires the prohibition of tobacco sales to minors (Art. 16) (WHO 2003: 15-16).[128] Switzerland's signing of the FCTC is likely to have highlighted the desirability of a sales ban to minors. Furthermore, in the light of the intended FCTC ratification, NPT 2008-2012 and 2008-2016 quest for the cantons to utilise their legislative competencies so as to restrict youth access to tobacco products (BAG 2008b: 36; BAG 2012: 12). These signals on the desired course of action in tobacco control policy might have encouraged cantonal policy adoptions.

Regarding the receipt of TPF funding for cantonal tobacco prevention programmes, cantons that adopt the ban on tobacco sales to children and adolescents meet the requirement of enacting regulatory tobacco control policies (see Chapter 5.1). But again, the cantons may also opt for some other policy

[128] Accordingly, the current lack of a nation-wide ban on under-age tobacco sales constitutes an obstacle to the ratification of the convention (similar to the lacking ban on tobacco advertising in the public space) (BAG 2013b: 25).

or bring to bear another already existing regulation on this requirement. That is why TPF funding is not assumed to provide a financial incentive for cantonal adoptions of the ban. During the observation period, no other federal, intercantonal or parastatal organisation provided funding for or technical assistance on adoption of the ban.

Against this background, the point-source diffusion variables for the ban on tobacco sales to children and adolescents for the years 2005 to 2013 are coded as summarised in Table 15.

Table 15: Ban on tobacco sales to children and adolescents: coding of point-source diffusion variables, 2005-2013

Factor of influence	*Coding of variable*	*Justification*
Financial incentives	2005-2013: 0	No provision of either positive or negative financial incentives
Technical assistance	2005-2013: 0	No provision of technical assistance
Strong signal about appropriate course of action	2005-2013: 1	Signal inherent to signing of WHO FCTC
Clear prospect of federal policy making	2005-2013: 0	No federal bill tabled or popular initiative filed

5.3 Alcohol Sales Restrictions

Core contents

The policies described in this subchapter restrict the access to alcoholic beverages, by limiting either the points or hours of sale. The first policy restricts or prohibits alcohol sales by petrol stations. The second one imposes a general ban on alcohol sales between 9 pm and 7 am on all retail outlets.[129] To some extent, the contents of the two policies overlap since petrol station shops are one type of retail outlets that are typically open beyond 9 pm.[130]

First adoptions

On 18 March 1998, the canton of Jura adopted a ban on alcohol sales at petrol stations, kiosks and school canteens.[131] When following the example of Jura and other, mainly French-speaking cantons, Geneva did not only prohibit certain establishments from selling alcohol, but also enacted a limit on the hours of alcohol sales that pertains to all retail outlets.[132] The legislative reform that resulted in the adoption of these alcohol sales restrictions was initiated by left-wing members of the cantonal parliament, who suggested a number of changes to the Act on Takeout Sales of Alcoholic Beverages

[129] Restaurants, bars and similar establishments are exempt from the ban. The relevance of the night-time sales ban depends on the cantonal legal opening hours of retail businesses. The policy is the more relevant, the more liberal the opening hours are.

[130] Nevertheless, due to the different logics of intervention that they are based on, the two sales restrictions are treated as separate policies.

[131] Bans that pertain to other sales points (gaming arcades, swimming pools, youth centres, vending machines) exist since the 1980s or even longer. In the 1980s, many cantons also made use of needs clauses in order to prevent petrol stations from obtaining alcohol sales licences or explicitly banned such sales (e.g. BE). Economic liberalisation, including the extension of store opening hours and the deregulation of alcohol licencing, and the growing number of petrol station shops have led to an increasing supply of alcoholic beverages at petrol stations. Jura is thus not the first-ever canton to prohibit petrol station shops from selling alcohol, but rather the first one to re-enact such a ban.

[132] In a few cantons, other time restrictions on alcohol sales exist: Basel-Stadt prohibits alcohol sales to minors between midnight and 7 am; Neuchâtel stipulates that spirits must not be sold from the opening of the store until 9 am; Fribourg bars restaurants from over-the-counter sales of alcohol after 10 pm; and Vaud prohibits alcohol sales between 4 and 10 am under temporary alcohol sales licences (cf. BAG 2016b). These restrictions are much more confined than the ban adopted by Geneva and are not taken into account here.

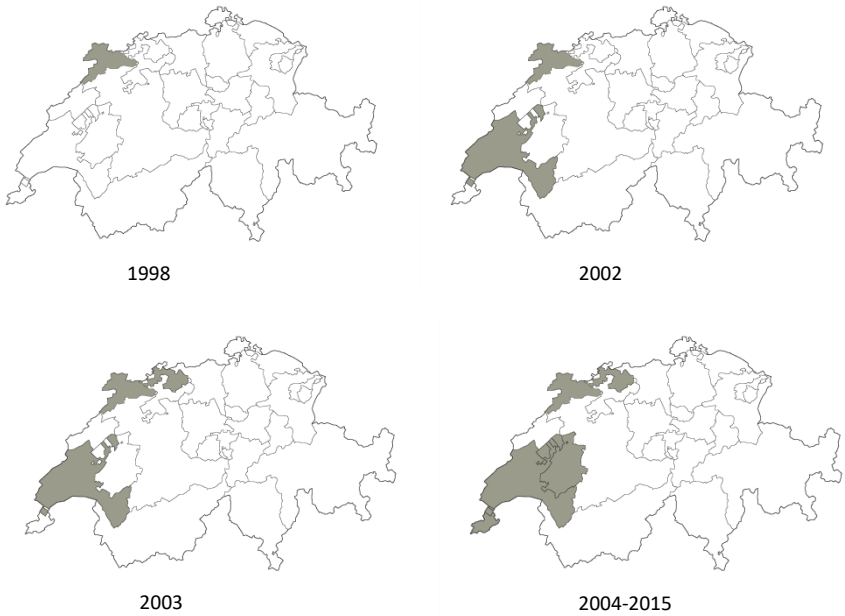
dating from 1982.[133] The initiators argued that the growing abuse of alcohol, particularly the increase in heavy episodic drinking among adolescents, required countering the easy accessibility of alcoholic beverages. Accordingly, the original legislative proposal provided for the prohibition of alcohol sales from vending machines and at kiosks, video rental shops and petrol stations. In accordance with the competent parliamentary commission, the cantonal government revised the original bill and inserted the ban on alcohol sales at night. The totally revised act, including the ban on takeout alcohol sales between 9 pm and 7 am, was adopted by the cantonal parliament on 22 January 2004. A referendum on the revised act was called for; the people approved the revisions on 26 September 2004. Most of the controversy surrounding the act, in both parliamentary and public debates, centred on the prohibition of alcohol sales by petrol stations and video rental shops, while the ban on sales at night proved much less contentious.

The Federal Supreme Court was called upon twice to rule on these alcohol sales restrictions. First, the court had to decide upon an appeal lodged by the tenant of a petrol station shop in Jura against the withdrawal of its alcohol sales licence. Later on, it had to assess the constitutionality of the point-of-sale and time restrictions entailed in the Geneva legislation, which the Association of Operators of Petrol Station Shops in Geneva (*Association genevoise des exploitants de magasins de stations service*) and two petrol stations had challenged. The court confirmed both the lawfulness of the administrative decision and the constitutionality of the statutory provisions (Tribunal fédéral 2000, 2005).

Patterns of diffusion[134]

Thus far, the ban on takeout alcohol sales at night has not spread to any canton beyond Geneva. Restrictions on alcohol sales by petrol stations have been adopted by five cantons in total, four of which are part of the CMPH-region of Romandie & Ticino. As Figure 12 shows, these adoptions occurred within a period of seven years, tapering off in 2004.

Figure 12: Restriction on alcohol sales at petrol stations: pattern of diffusion, 1998 to 2015



Source: Own illustration; for data sources see Table 54 and Table 55 in the Appendix.

[133] The description of the decision-making process in Geneva is based on the parliamentary proceedings (Grand Conseil de Genève 2002, 2003, 2004) and the official booklet for the referendum (Chancellerie d'Etat de Genève 2004).

[134] Table 54 and Table 55 in the Appendix list the dates of cantonal policy adoptions and the relevant legal sources.

Variations in cantonal policy designs[135]

Cantonal policy designs of the restriction on alcohol sales at petrol stations differ mainly in three aspects. First, Fribourg and Basel-Landschaft prohibit petrol stations only from selling spirits, while the three other adopters ban the sale of all alcoholic beverages. Secondly, Jura, Fribourg and Basel-Landschaft extend the ban to kiosks, while Geneva covers video rental shops besides petrol stations. Thirdly, Jura provides for an exemption to the sales prohibition: If a petrol station shop or kiosk is the only local retail outlet, the cantonal government may licence it to sell alcoholic beverages.

Policy designs and characteristics[136]

The primary objective of the restriction on alcohol sales at petrol stations is to prevent drunk driving and thus to reduce the number of related road accidents. Moreover, the policy is to reduce the overall consumption of (strong) alcohol, especially at night. In restraining or prohibiting alcohol sales by petrol station shops, it targets a sales channel that otherwise supplies alcoholic beverages at low prices (as compared to the prices charged for alcoholic beverages in bars or restaurants) until late at night. The ban on takeout alcohol sales at night pursues a similar objective. It aims at preventing the excessive consumption of alcohol when people go out and the associated negative health and social effects. It does so by reducing the availability of low-priced alcoholic beverages. Both policies subscribe to the wider goal of alcohol prevention policy, which is to prevent forms of alcohol consumption that entail health risks for the person drinking and negative consequences for others.

They are based on a regulatory tool. In the case of the restriction on alcohol sales at petrol stations, the licensees of petrol station shops constitute the direct target group, while shop customers make up the indirect targets. The ban on takeout alcohol sales at night directly targets the management and staff of retail businesses that hold an alcohol sales licence, with their clients being the indirect target group.

The responsibility for implementing both policies (granting of sales licences, enforcement and sanctions) resides with cantonal and/or municipal administrative units.

Table 16: Restriction on alcohol sales at petrol stations and ban on takeout alcohol sales at night: components of the policy designs

	Restriction on alcohol sales at petrol stations	*Ban on alcohol sales at night*
Objective	Preventing drunk driving; reducing the overall consumption of alcohol	Preventing the excessive consumption of alcohol at night
Action content	Prohibition of the sale of spirits (or all alcoholic beverages) at petrol station shops	Prohibition of alcohol sales at retail shops between 9 pm and 7 am
Direct target group	Petrol station shops	Retail shops open at night
Indirect target group	Customers of petrol station shops	Customers of retail shops open at night
Tool	Prohibition	Prohibition
Delivery system	Cantonal/municipal administrative units	Cantonal/municipal administrative units

In political debates, young people are often stated as an important or even the primary target group of the two policies of interest. Since adolescents and young adults tend to have less money than adults at a higher age, they are more likely to stock up on alcohol from petrol station shops and other retail businesses that offer alcoholic beverages at relatively low prices. Nevertheless, neither of the policy

[135] This description is based on an analysis of the legal documents referred to in Table 54 and Table 55.
[136] See Table 54 and Table 55 in the Appendix for the sources that inform the description of policy designs and characteristics in this section.

designs singles out children or adolescents as the direct or indirect target group and hence as the designated beneficiaries.

Both policies are highly coercive: They ban a particular activity, include provisions for enforcement of regulatory norms (inspection of establishments, order to cease unauthorised activity, sequestration of alcohol, temporary closing of retail outlet, licence withdrawal) and stipulate sanctions in the case of non-compliance (monetary fines). Alcohol sales are likely to account for a noticeable share of sales of petrol station shops and shops that stay open at night. Overall, sales restrictions are associated with an upper medium level of intrusion in that they restrain, but do not suppress an economically relevant activity.[137] Given the high degrees of coercion and the upper medium levels of intrusion, the two alcohol sales restrictions are to be classified as highly interventionist.

The alcohol sales restrictions represent single measures. The relevant acts or ordinances simply state the ban or restriction, without the content being elaborated on. Since alcohol sales are subject to licencing, all cantons have, either at the cantonal or municipal level, administrative units that can be tasked with implementing the sales restrictions of interest. No policy-specific delivery system has to be created. Thus, both policies entail simple designs. Implementation costs are not budgeted separately, but figure under more general spending categories.

Table 17: Restriction on alcohol sales at petrol stations and ban on takeout alcohol sales at night: characteristics of the policy designs

Policy characteristic	*Dimension*	*Value*
Designated beneficiaries	-	**More comprehensive than children/adolescents**
Degree of intervention	Coerciveness	High
	Intrusiveness	Upper medium
	Overall	**High**
Complexity	Scope	Narrow
	Calibration	Low
	Automaticity	High
	Overall	**Low**
Implementation costs	-	**Invisible**

Federal and national contexts

At the federal level, a few alcohol sales restrictions exist, including the prohibitions to sell alcohol to children and adolescents below 16 years of age, to sell spirits (i.e. alcoholic drinks with more than 15 percent alcohol by volume) to young people below 18 years and to sell alcoholic beverages at motorway service areas (see Table 18).

Table 18: Federal alcohol sales restrictions

Regulation	*Description of content*
Ban on alcohol sales to children and adolescents	▪ Ban on alcohol sales to children and adolescents below 16 years ▪ Requirement to display alcoholic and non-alcoholic beverages separately ▪ Requirement to signpost minimum purchasing age at point of sale
Ban on selling spirits to minors	▪ Ban on the sale of alcoholic beverages with more than 15 % alcohol by volume to minors
Ban on alcohol sales at motorway service areas	▪ Ban on serving and selling alcoholic beverages at motorway service areas

Source: Own compilation based on BAG (2015c).

[137] In cantons that prohibit the sale of alcoholic beverages by petrol station shops entirely, the policy involves a high level of intrusion. This difference in cantonal policy designs does not affect the degree of intervention, which is high under both constellations, though.

Between 1990 and 2010, there were no legislative endeavours at restricting alcohol sales by petrol stations or similar points of sale or at banning night-time sales at the federal level.[138] In 2011, the Federal Council presented its suggestion for a total revision of the federal alcohol legislation. While the bill put up for discussion during the pre-consultation phase provided for several sales restrictions (e.g. ban on alcohol sales from vending machines that are not supervised; ban on loss-leader prices), it contained neither of the two policies of interest. In their statements on the federal bill, five cantons (FR, LU, SZ, TI, ZG) called for restrictions on alcohol sales at night, while one canton (BS) expressed its preference for time restrictions on alcohol sales imposed on particular points of sale, such as petrol stations (EAV 2011: 36-37). Left-wing parties and public health organisations also advocated a ban on alcohol sales at night (EAV 2011: 36-37). Because of these demands, the Federal Council included in the bill submitted to parliament a provision that prohibits retail outlets to sell alcohol between 10 pm and 6 am (Bundesrat 2012: 1379-1380). After the submission of the bill on 25 January 2012, the National Council and the Council of States debated and modified the bill several times. Yet, by the end of 2015, they had not reached a consensus on the future course of Swiss alcohol regulation, with the proposed ban on night-time sales being one of the contentious issues (EAV 2015b). As a consequence, the bill was abandoned (Bundesrat 2016).

Regarding financial incentives or disincentives for the adoption of the two alcohol sales restrictions, the tenth of the taxes that the Swiss Alcohol Board collects on spirituous beverages and that the cantons receive (see page 55) is the only source of funding that comes into consideration. The cantons have to spend these revenues on the prevention of the abuse of alcohol or other psychoactive substances. However, no conditions exist that require the cantons to take regulatory measures in the field of alcohol prevention. Hence, the tenth of taxes on spirituous beverages is not assumed to exert any top-diffusion effect on the adoption of cantonal alcohol sales restrictions.

With regard to technical assistance, the activities of the Swiss Federal Commission on Alcohol Policy (EKAL/CFAL) as well as of other federal actors merit closer inspection. More specifically, as a means of accomplishing the goals of the national prevention programmes on alcohol (NPA 2008-2012, NPA 2013-2016), the EKAL/CFAL promotes the adoption of cantonal action plans, which set out the strategic foundations of cantonal alcohol control policy (EKAL 2015). The EKAL/CFAL, in collaboration with the FOPH, the Swiss Alcohol Board and the CMPH, also organises annual conferences that are directed at cantonal public officials in charge of alcohol control policy. Since 2011, it offers two or three half-day workshops per year on specific issues in alcohol control policy, two of which have so far broached the issue of the ban on alcohol sales at night (workshops in 2005 and 2010; EKAL 2015, BAG 2015d). Of late, the FOPH provides the cantons with a planning tool intended to support the formulation of alcohol prevention policies, which is to encourage the adoption of cantonal action plans and prevention programmes on alcohol (BAG 2015e; Balthasar et al. 2014). In short, in alcohol prevention policy, several forms of technical assistance are offered to the cantons. It is likely that these federal-government activities positively impact on the overall scope of cantonal alcohol prevention policy. However, the federal activities do not specify any particular course of action to be followed by the cantons and they do not centre on sales restrictions. For these reasons, they are not assumed to have a noticeable impact on the likelihood that the cantons restrict either alcohol sales by petrol stations or

[138] However, between July 2009 and November 2013, an administrative decision restricted night-time alcohol sale by the small number of petrol stations that are located at main artery roads and are open 24 hours. Based on the Federal Labour Act and its provisions on the admissibility of night work, the State Secretariat for Economic Affairs (SECO) conditioned the special authorization of night work that these petrol stations needed to obtain on the constraint that between 1 and 5 am only products are sold that travellers are in need of. Thus, the petrol stations concerned were allowed to sell petrol, coffee and snacks at night time, but not alcohol (and other goods). A change in the Federal Labour Act that was adopted in December 2012 removed the need for petrol station shops located on main artery roads and motorways to obtain a specific authorisation for night work, thus effectively allowing these outlets to offer their entire assortment of goods also during the night (Bundesversammlung 2012).

at night. Hence, the respective variable is coded 0. Table 19 summarises the coding of the point-source diffusion variables for the two alcohol sales restrictions throughout the respective period of analysis.

Table 19: Alcohol sales restrictions: coding of point-source diffusion variables, 1998/2004-2013

Factor of influence	*Coding of variable*	*Justification*
Financial incentives	1998/2004-2013: 0	No positive or negative financial incentives for adopting sales restrictions
Provision of technical assistance	1998/2004-2013: 0	No specific technical assistance on sales restrictions
Strong signal about appropriate course of action	1998/2004-2013: 0	Signal about desirability of cantonal action, but not specifically about sales restrictions
Concrete prospect of federal policy making	1998-2013: 0	Alcohol sales at petrol stations: no federal bill tabled or popular initiative filed
	2004-2011: 0 2012-2013: 1	Alcohol sales at night: draft legislation submitted in January 2012

5.4 Breast Cancer Screening Programmes

Core content

Cantonal organised breast cancer screening programmes invite all women aged 50 years and older who live in the canton to attend a mammography examination at an accredited radiology centre every two years. Participation is voluntary. Unlike diagnostic mammography exams, which a gynaecologist or general practitioner may arrange for when being consulted, organised programmes entail the systematic and regular screening of the entire target population, thus aiming at equal access of all women. Moreover, organised programmes provide for quality assurance.

First adoption

On the initiative of a private-law foundation set up in Lausanne by several professors of medicine specifically for that purpose, the canton of Vaud pilot-tested an organised screening programme in Switzerland (Bulliard et al. 2003: 1762). It was expected that such a programme would promote the more rational utilisation of mammography examinations, lead to the earlier detection of breast cancer among participating women, allow for the use of less intrusive surgery, and ultimately decrease breast cancer mortality (Bulliard et al. 2003: 1761).

In 1993, the cantonal government authorised and provided the financial means for the pilot project, which was carried out in the districts of Aigle, Aubonne and Morges and ran from October 1993 to January 1999. The pilot project confirmed the feasibility and acceptance of the programme. Against this backdrop, Vaud decided in 1998 to extend the programme to the entire canton (Bulliard et al. 2003: 1761).

Pattern of diffusion[139]

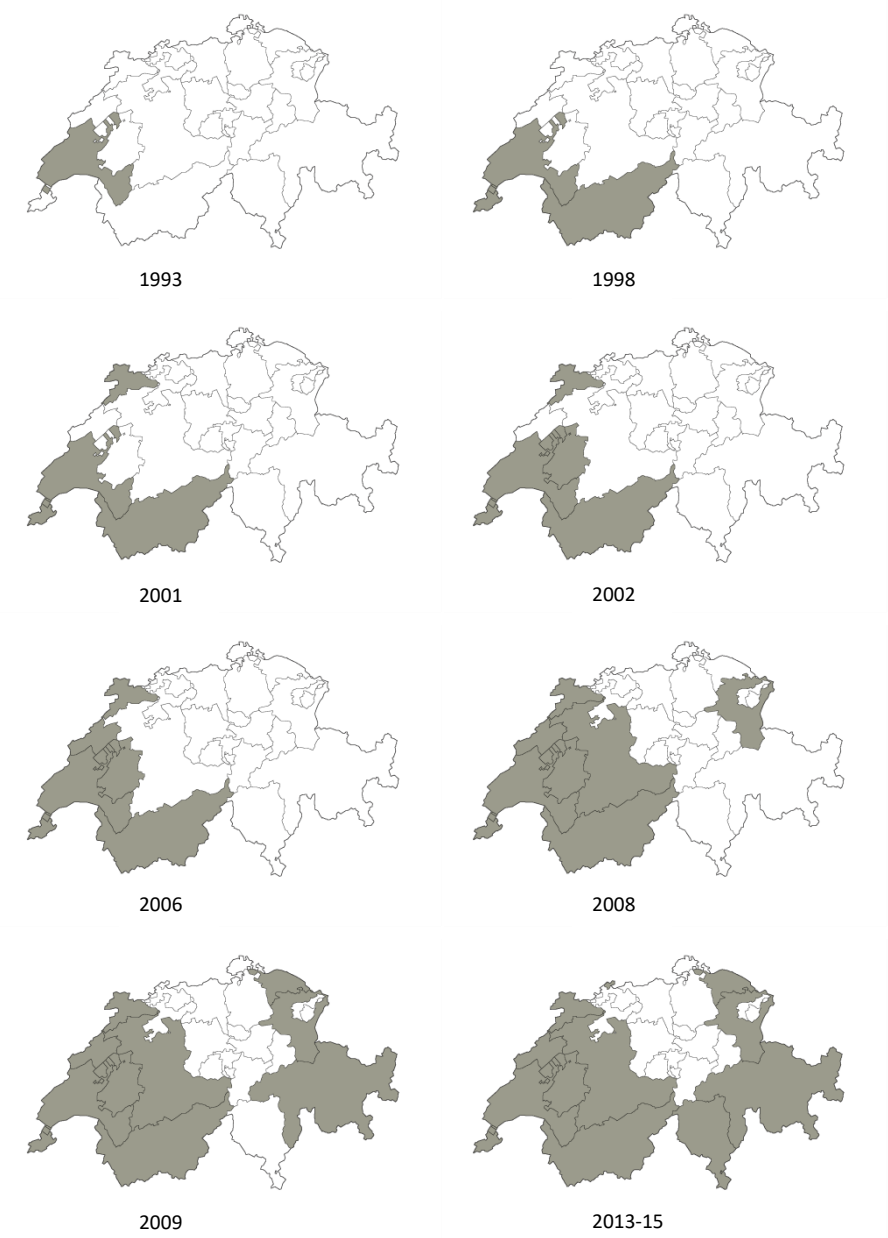
By 2015, 12 cantons had adopted breast cancer screening programmes. As

Figure 13 on the following page illustrates, there are large differences between the CMPH-regions. Early in the diffusion process, the policy spread exclusively among the French-speaking cantons and nowadays all cantons that make up the region of Romandie & Ticino operate such a programme. In contrast, in Central Switzerland, not a single canton has adopted organised breast cancer screenings to date. Three out of eight cantons in Eastern Switzerland have opted for a screening programme, with St. Gallen being the first one and its neighbours Graubünden and Thurgau to follow one year later.

[139] For the dates of adoption and onset of implementation, see Table 56 in the Appendix.

Similarly, three out of eight members of the north-western CMPH-conference have instituted screening programmes. Two intercantonal programmes exist – Jura, Neuchâtel and the Jura bernois run a joint programme and so do St. Gallen and Graubünden.[140]

Figure 13: Breast cancer screening programmes: pattern of diffusion, 1993 to 2015



Variations in cantonal policy designs

Due to the federal provisions on quality assurance (cf. Bundesrat 1999; for more details see below), the services provided are identical across programmes. Differences exist in three areas: cost-sharing provisions, the exact delineation of the target group and the type of institution that manages the programme.

Since obligatory health insurance covers screening-mammography (if carried out within organised programmes), health insurance funds pay for a substantial share of the costs incurred. Due to the principle of cost sharing that governs Swiss obligatory health insurance, women who participate in the programme pay 10 percent of the costs of mammography exams out of their own pockets (i.e.

[140] The dates of policy adoption nevertheless vary across these cantons.

approximately CHF 20) (swiss cancer screening 2015b).[141] Currently, the practice in Ticino constitutes the only exception to this rule as it offers the examinations free of charge to women who reside in the canton, paying for the 10 percent retention fee with government funds (TI DSS 2015). As evident from Table 20, the age groups screened differ somewhat between cantons. Most cantons define a primary target group of women (aged 50-69/70 or 50-74 years), who are invited to participate in the programme every two years. At the same time, cantons usually open up the programme to older women, who may contact the programme centre themselves. Almost all adopters tie programme eligibility to residence in the canton, but Geneva also covers cross-border commuters who have taken out obligatory health insurance in Switzerland.

Table 20: Cantonal breast cancer screening programmes: delineations of the direct target group

Target group	*Cantons*
Women aged 50-69	GR/SG
Women aged 50-74	FR
Invited to programme: women aged 50-69; participation by request: women aged 70 and older	BS, TI, VD
Invited to programme: women aged 50-70; participation by request: women aged 71-74	VS
Invited to programme: women aged 50-74; participation by request: women aged 75 and older	BE, GE, BEJUNE[142], TG

Source: Own compilation, based on swiss cancer screening (2015a).

As regards programme management, different arrangements exist (swiss cancer screening 2015a): Four cantons (GE, JU, NE and VD) created a specific public- or private-law organisation and mandated it with the operation of the programme. Six adopters (BE, BS, FR, GR/SG, VS) delegated the establishment and management of the programme to the cantonal section of a health league (in most instances, the cancer league), i.e. to a private, non-profit organisation. Ticino mandated a unit within the cantonal administration with the creation and administration of the programme, while Thurgau gave a performance mandate to the private-law organisation that owns and runs the hospitals of the canton.

Policy design and characteristics[143]

Breast cancer screening programmes join three measures: a substantive one (i.e. screening for breast cancer) and two ancillary institutional ones (i.e. quality standards[144] and further training of radiologists for the purposes of quality assurance) (see Table 21).[145]

Breast cancer screenings aim at early detection as a prerequisite for early treatment of the disease, which increases the chances of women who are diagnosed with cancer to survive it. Women from the age of 50 years onwards are the direct target group. The delivery system for the provision of biennial mammography exams embraces the following institutions: a coordination centre, which is in charge of programme management; accredited radiology centres, which carry out the exams and subsequent

[141] Swiss obligatory health insurance entails two elements of cost-sharing: an annual fixed amount (deductible) and a retention fee of 10 percent, which is levied on the costs of all treatments that exceed the deductible (up to a maximum of CHF 700 per year) (BAG 2015f).

[142] BEJUNE is the programme of the cantons Jura and Neuchâtel and the Jura bernois.

[143] The description of the policy design and characteristics is based on swiss cancer screening (2015a, 2015b).

[144] The federal government prescribes the standards of quality assurance that screening programmes have to meet (cf. Bundesrat 1999). The standards entailed in the relevant federal ordinance pertain to programmes as a whole and to the participating radiologists and radiology centres. Here, the focus rests on the latter types of standards.

[145] This is an instance of vertical packaging (cf. page 36).

readings of mammograms; external physicians (gynaecologists, primary care physicians), who offer consultation and arrange for follow-up diagnostic tests and treatment if needed.

In most cases, parastatal organisations or other organisations provided with a performance mandate manage cantonal programmes, which includes the following tasks: ensuring the enrolment of the target group, organising the sequence of readings of the mammograms, coordinating the provision of follow-up tests and treatment if necessary, accrediting radiology centres, negotiating the tariffs for service provision, taking care of quality assurance and programme monitoring.

Table 21: Breast cancer screening programmes: components of the policy design

	Screening	*Quality standards*	*Further training*
Objective	Early detection of breast cancer	Securing a high quality of diagnostic findings	Securing a high quality of diagnostic findings
Action content	Biennial, quality-assured mammography exams	Minimum number of exams and readings per radiologist; conformity of readings and apparatuses with EU guidelines; monitoring	Courses on screening-mammography
Direct target group	Women aged 50 years and more	Radiologists; radiology centres	Radiologists
Indirect target group	-	Women who participate in the programme	Women who participate in the programme
Tool	Service provision	Contracting	Training
Delivery system	Programme centre, radiology centres, external physicians	Programme centre, swiss cancer screening	Programme centre, professional experts

The objective of the quality standards is to secure a high quality of diagnostic findings, in particular to minimise false negatives (i.e. failing to diagnose breast cancer when it exists) and false positives (i.e. diagnosing breast cancer when it does not exist). Besides the most important provision for quality assurance at the programme level, i.e. is the independent reading of mammograms by two radiologists and performance of a third arbitration reading in case of dissent, screening programmes impose a number of quality standards on radiologists and radiology centres involved in service delivery: Only specialists in medical radiology are allowed to carry out the mammography exams. They have to conduct a minimum number of exams per year, read a minimum number of mammograms each year, ensure that the quality of their readings conforms to the relevant EU guidelines for quality assurance in mammography screening and furnish the data needed for programme monitoring. The quality of readings is also subject to an annual evaluation. Finally, technical apparatuses need to conform to EU guidelines, with regular check-ups being required. These provisions are specified in federal regulation, with the cantons that adopt breast cancer screening programmes being the addressees of the relevant federal ordinance (cf. Bundesrat 1999).

The policy instrument that is used for ensuring compliance with these quality standards in cantonal programmes is contracting since the relevant standards are included in the contracts that programme centres conclude with participating radiology centres. Radiologists and radiology centres are thus the direct target group of quality standards. The women who take mammography exams are intended to benefit from this measure of quality assurance and constitute the indirect target group. Programme centres are in charge of monitoring and enforcing compliance with these standards. For doing so, they can draw on the assistance of swiss cancer screening, which is the national umbrella organisation of cantonal programmes (see section below).

Furthermore, radiologists have to complete a course on screening mammography prior to being admitted as service providers and to take part in regular case reviews later on. Similar to the quality

standards directed at them, this measure is to ensure the high quality of mammography exams and readings. Radiologists are again the direct target group and women who participate in the programme the intended beneficiaries. For this second measure of quality assurance, the tool used is the provision of training and the facilitation of professional exchange. Programme centres are in charge of organising training courses and case reviews. In doing so, they rely on professional experts.

Table 22: Breast cancer screening programmes: characteristics of the policy design

Policy characteristic	*Dimension*	*Value*
Designated beneficiaries	-	**Other than children/adolescents**
Degree of intervention	Coerciveness	Quality standards: Lower medium
	Intrusiveness	Quality standards: Lower medium
	Overall	Quality standards: **Low**
Complexity	Scope	Wide
	Calibration	High
	Automaticity	Low
	Overall	**High**
Implementation costs	-	**High**

None of the three measures addresses children or adolescents as direct or indirect target groups.

In assessing the coerciveness and intrusiveness of the policy, the focus rests on the measure of quality standards. Radiology centres are free to decide whether or not to supply their services to breast cancer screening programmes. For centres admitted, compliance with quality standards is non-negotiable, though. The establishment of screening programmes effectively changes the business environment of radiology centres in that non-participating centres might fall behind competitors. As non-participating centres forego a benefit that the policy provides, the level of coercion applied is to classified as lower medium. Radiologists who are part of the programme have to comply with a comprehensive set of standards. The measure thus clearly defines the ways in which certain professional practices of the direct target group have to be carried out. Hence, the level of intrusion is lower medium. According to the aggregation rule specified in Chapter 3.3, quality standards directed at radiologists and radiology centres involve a low degree of intervention.[146]

Screening programmes comprise three policy measures. Due to the extensive provisions on quality assurance, the degree of calibration is high. Probably due to the sizable number of implementation tasks involved, all cantons created a new structure (i.e. a coordination centre). Moreover, programme operation requires the coordination of a number of implementing agencies. Hence, the automaticity of the delivery system is low. Screening programmes clearly entail a complex policy design.

Concerning implementation costs, the budget of the foundation managing the programme in the canton of Vaud amounted to CHF 900 000 in 1999, with CHF 700 000 of this sum being covered by the canton (Landtsheer et al. 2000). The cantonal subsidies provided in 1999 corresponded to an amount of CHF 12.50 per woman participating in the programme (Landtsheer et al. 2000). In addition to the spending on programme management, total costs include the expenses by health insurance funds for reimbursement of the costs of the mammography exams. Data on overall programme costs in 1999 are not available, but the total costs for a two-year screening campaign in Vaud in the mid-2000s were calculated at CHF 6 350 656 (de Wolf 2007: 597).

Federal and national context

In the late 1990s, plans to set up a Swiss-wide breast cancer screening programme existed, as formulated by the first national cancer prevention programme (Zeyen 2001: 6). Under the auspices of

[146] The value "low" is due to the two-fold classification system. If a scheme with three categories was used, quality standards would be classified as entailing a medium level of intrusion.

the Swiss Cancer League and with the support of the FOPH, an action plan was drafted in 1997 and the joint efforts culminated in the creation of a foundation that was to expedite the preparations for the programme (Faisst/Ricka-Heidelberger 2001: 26). But several obstacles, including the failure of service deliverers and health insurance funds to agree on a tariff for the reimbursement of mammography exams, prompted the foundation to cease its activities in 2000 (Faisst/Ricka-Heidelberger 2001: 26).

While a national screening programme did not figure on the federal agenda until 2014, several federal decisions set important parameters for the establishment and operation of cantonal programmes.[147] In 1994, a new Federal Health Insurance Act was passed, which allows for cost coverage of certain measures of early diagnosis. In view of this provision, the Swiss Cancer League and the foundation in charge of the screening programme in Vaud requested in 1995 that mammography exams that are carried out within organised programmes are included into the catalogue of benefits paid for under obligatory health insurance (Faisst/Ricka-Heidelberger 2001: 24).

In July 1997, inclusion into the catalogue of benefits was authorised for a period of 10 years, but made contingent on the conclusion of a nation-wide quality assurance treaty. Due to the failure of the parties concerned to conclude a treaty, the Federal Council enacted in June 1999 a set of minimum quality requirements that cantonal breast cancer screening programmes must meet (Faisst/Ricka-Heidelberger 2001: 25). Subsequently, the Federal Department of Home Affairs enacted cost coverage, which became effective on 1 July 1999.[148] Moreover, a revision of the Federal Health Insurance Act, which came into effect on 1 January 2001, allowed the Federal Council to exempt mammography exams from the deductible. As a result, since 2001, no insured person has to pay more than 10 percent of the costs of mammography exams. Since January 2010, mammography exams that are delivered within an organised programme are a regular benefit paid for by health insurance funds (cf. EDI 2009).

On the initiative of CLASS, the national umbrella organisation “swiss cancer screening” was founded in July 2008, which is to support existing cantonal programmes and to promote the adoption of organised screening programmes by other cantons. Swiss cancer screening joins cantonal breast cancer screening programmes and provides technical assistance, such as the development of an IT tool for programme management, the formulation of programme materials and the implementation of quality assurance (swiss cancer screening 2015c).

In 2014, the Federal Office of Public Health and Swiss Conference of Cantonal Ministers of Public Health jointly launched the National Strategy against Cancer, according to which all women in Switzerland should have access to organised breast cancer screenings (Dialog Nationale Gesundheitspolitik 2013). The strategy does not explicitly call upon the cantons (or the federal level) to assume responsibility for the establishment of such programmes, though.

Table 23 summarises the coding of the point-source diffusion variables for breast cancer screening programmes between 1993 and 2013, i.e. the period during which the policy will be observed in later chapters.

[147] Throughout this period, various parliamentary activities shaped federal policy making. They called for the coverage of breast cancer screenings under obligatory health insurance (parliamentary initiative 05.467, motion 09.3356), the exemption of screenings from the deductible (motions 97.3486, 99.3071, 99.3641, 08.3733) and, more recently, raised issues concerning the quality of breast cancer screening in Switzerland (postulate 14.3054, motions 14.3049, 14.3055). However, they did not advocate the establishment of a nation-wide breast cancer screening programme (cf. Curia Vista (Bundesversammlung 2016b)

[148] In Table 23, the variable is coded as 1 from 1998 onwards since the commitment to cover mammography screenings under obligatory health insurance is likely to have encouraged the adoption of screening programmes, even before the Federal Council definitely enacted cost coverage.

Table 23: Breast cancer screening programmes: coding of point-source diffusion variables, 1993-2013

Factor of influence	*Coding of variable*	*Justification*
Financial incentives	1993-1997: 0	No federal funding
	1998-1999: 1	Commitment to cover mammography exams under obligatory health insurance
	2000-2013: 1	Actual coverage
Technical assistance	1993-2008: 0	No technical assistance
	2009-2013: 1	Provision of technical assistance by swiss cancer screening
Strong signal about appropriate course of action	1993-2013: 0	No such signal
Concrete prospect of federal policy making	1993-2013: 0	National-level activities, but no clear indications of federal policy making

5.5 Restaurant Food Nutrition Labelling

Core content

Restaurant food nutrition labelling attests to foodservice establishments that they offer healthy meals to their customers. In the course of the labelling process, the compliance of the catering facility with a set of nutritional standards (and possibly other criteria) is verified. At present, two labels, as awarded by the Swiss cantons, exist, which are entitled *Fourchette verte* (FV) and *schnitz und drunder* (s&d).[149] The labels differ mainly in terms of target groups. FV targets the entire spectrum of foodservice establishments, whereas s&d exclusively aims at the labelling of establishments that cater for children and adolescents. Both systems facilitate labelling with a number of services provided to foodservice establishments, such as consultancy and staff training.

First adoption

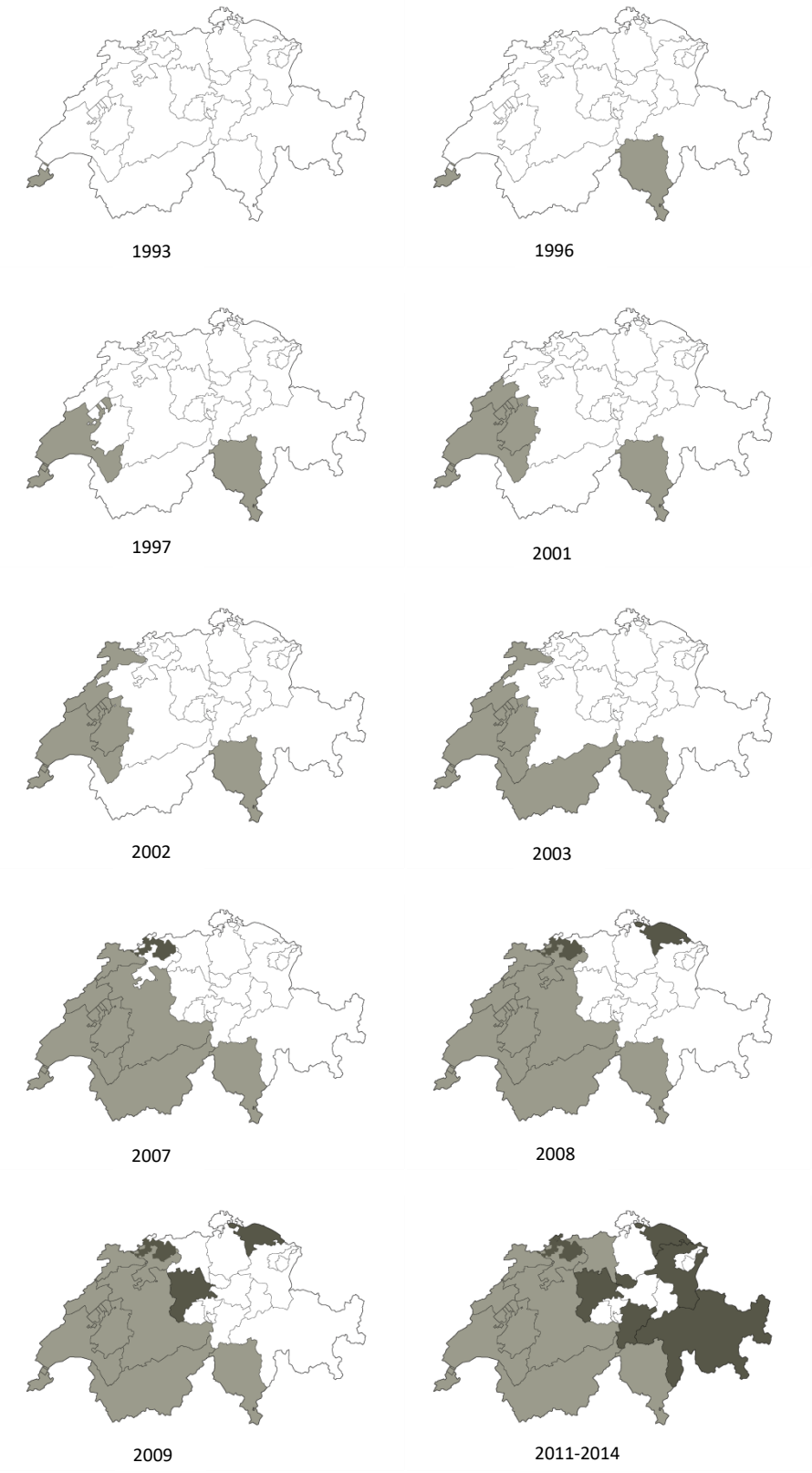
FV was created by the health department of the canton of Geneva in 1993, in collaboration with the Geneva Society of Restaurateurs and Hoteliers (*Société des Cafetiers, Restaurateurs et Hôteliers de Genève*) (FV-CH 2013a). The creation of the label was motivated by the recognition that certain health behaviours, such as unhealthy diets, smoking and excessive alcohol consumption, account for the lion's share of premature deaths. Apart from making healthy out-of-home food, served in a healthy environment, more widely available, the initiators of the label also intended to raise the awareness of the importance of a healthy diet among restaurant staff and customers (cf. FV-CH 2013b: 4). In response to the opposition of restaurants to direct government intervention, the department set up a non-profit organisation in 1996 and mandated it with administering the programme (FV-CH 2013a).

The results of the Swiss health survey 2002 on the prevalence of obesity and unbalanced diets in the canton provided the impetus for Basel-Landschaft to initiate s&d (BZ 2008). In 2007, the cantonal division on health promotion and disease prevention and the competence centre for agriculture and nutrition started to devise the policy. Later on, it was integrated into the cantonal action programme on a healthy body weight (Regierungsrat des Kantons Basel-Landschaft 2008). By awarding the label, the canton intended to arrange for healthy out-of-home eating of children and adolescents and to set an example of healthy eating habits more generally (BS LZE 2015).

[149] *Fourchette verte* is French for "green fork", which is the logo of the label. *Schnitz und drunder* is the name of a traditional winter dish from north-western Switzerland, which includes apple or pear cuts.

Pattern of diffusion[150]

Figure 14: Restaurant food nutrition labelling: pattern of diffusion, 1993 to 2014



Legend: Adoption of *Fourchette verte* (light grey); adoption of *schnitz und drunder* (dark grey).

[150] See Table 57 in the Appendix for the dates of cantonal adoption.

Figure 14 reveals that for more than a decade restaurant food nutrition labelling diffused rather slowly and exclusively among the French-speaking cantons and Ticino. In 2007, Bern adopted the label for the Jura bernois, in collaboration with *Fourchette verte Jura.* It thus completed the diffusion of the label within the CMPH-region of Romandie & Ticino.

In the same year, Basel-Landschaft created its own label (s&d), which gave new momentum to the diffusion of restaurant food nutrition labelling. Since 2008, two more cantons adopted FV (SO in 2008 and AG in 2011) and seven opted for s&d (five of them in 2011 alone). The total number of adopters in 2014 stood at 18 cantons. In comparing the CMPH-regions, Eastern Switzerland exhibited the lowest extent of diffusion. Three out of eight cantons in that region had a labelling system in place (i.e. s&d). Half of the cantons in Central Switzerland awarded a healthy nutrition label. For all of them, s&d was the label of choice. In the two remaining regions, labelling systems spread to all members. In Romandie & Ticino, all cantons belonged to FV. North-western Switzerland was divided at the end of 2014, with four adopters of FV and three adopters of s&d.

In 2012, FV-CH and Radix initiated a process of integrating s&d into FV (FV-CH 2015a: 5, 2016: 6). As a consequence, from 1 January 2016 onwards, FV will serve as the exclusive label for healthy nutrition (FV-CH 2016: 6). In late 2015, three adopters of s&d (BL, BS, SG) joined FV (FV-CH 2016: 6-7).

Variations in cantonal policy designs

Differences between the labels FV and s&d mainly account for variations in cantonal policy designs. The two labels and the delivery systems that the cantons established are presented below.

FV is administered jointly by a national association (*Fédération Fourchette verte Suisse*) and cantonal sections (FV-CH 2013b: 3). In order to qualify for the label, foodservice establishments have to fulfil two general criteria: to serve varied and balanced meals[151] and to ensure a healthy environment by observing hygiene standards and separating waste (FV-CH 2013b: 3). Restaurants, cafés, self-service restaurants and staff canteens also have to offer at least three non-alcoholic drinks at lower prices than the cheapest alcoholic beverage. Catering facilities are also recommended to give preference to sustainable products (i.e. local, seasonal and organic foodstuffs).

FV targets the entire spectrum of foodservice establishments that offer midday lunches or full-day catering, including restaurants, cafés, fast-food restaurants and communal catering facilities (e.g. school and university canteens, staff restaurants, childcare centres and homes for the elderly). In order to make the label applicable to the different types of catering facilities, a number of sublabels were created successively (see Table 24 on the next page). Currently, a divide between the French/Italian- and the German-speaking cantons that have adopted FV exists. The former award all or almost all labels, while the latter concentrate their activities on facilities that cater for children and adolescents (FV-CH 2015b).

Regardless of the range of labels awarded, labelling is restricted to facilities that are located in cantons that have set up a cantonal FV section.[152] The respective cantonal section is in charge of labelling, which is based on the evaluation of a menu plan submitted and a test meal. Consultancy and staff training are offered to establishments that undergo labelling and also to certified facilities (FV-CH 2013b: 9). Labels are valid for one year. After one year, another test meal is carried out. If the establishment complies with the FV-standards (or makes necessary adjustments within the period stipulated), the label is renewed (FV-CH 2013b: 9).

[151] Both FV and s&d draw on the recommendations of the Swiss Society for Nutrition.

[152] Due to the collaboration with the largest communal catering company in Switzerland, which was launched in December 2013, staff canteens all over Switzerland were recently labelled, also in cantons that have not joined FV or where the cantonal section does not offer the respective variant of the label (cf. FV-CH 2015a: 5).

Concerning the organisation in charge of labelling, two cantons set up a specific organisation (GE, TI), while most cantons awarded a performance mandate to an existing non-profit organisation (BE, FR, JU, NE, VD, VS) (FV-CH 2015c). Jura and Valais gave the mandate to the external organisation serving as the specialised unit on health promotion and prevention (see footnote 80). Solothurn delegated labelling to a cantonal division and Aargau to a self-employed nutritionist (FV-CH 2015c). All cantonal FV sections have established an independent committee, which decides on the labelling of each facility based on the recommendation by the nutritionist, who previews the application (FV-CH 2013b: 9-10).

Table 24: Fourchette verte: sublabels

- Facilities that take care of children aged less than four years (*Fourchette verte des tout-petits*)
- School canteens and other providers of midday lunches to children and adolescents aged 4 to 15 years (*Fourchette verte junior*)
- Day-care facilities for children and adolescents aged 4 to 15 years (*Affiliation Fourchette verte junior*)
- Restaurants, cafés, self-service restaurants and communal catering facilities (*Label Fourchette verte*)
- Day-care facilities for adults (*Affiliation Fourchette verte*)
- Day-care facilities for the elderly (*Affiliation Fourchette verte senior*)

Source: FV-CH (2013b: 4).

The label s&d targets exclusively establishments that cater for children and adolescents, such as childcare facilities, providers of afterschool day-care, school canteens and similar institutions. While no diffusion agency was created specifically for the purpose of disseminating s&d, since late 2011, RADIX, a private-law foundation specialised in the field of health promotion, assumes the tasks of programme multiplication, coordination of cantonal activities and provision of technical assistance (RADIX 2011).

To be awarded the label, childcare facilities and similar establishments have to comply with criteria in five areas: a balanced, healthy choice of ingredients of meals; the storage and preparation of groceries so that nutrients are preserved; the involvement of the children catered for in the planning and preparation of meals; sustainability (i.e. giving preference to seasonal, regional, ecological and fair-trade products in purchasing groceries); and a positive, health-promoting table culture (RADIX 2015a).

The labelling process is quite similar to the one that governs FV. The main differences are: a nutritionist (instead of a committee) decides about the awarding of the label; no test meals are carried out and the label is valid for two years. Consultation and training are provided to catering facilities during the process of labelling, which usually takes 6 to 12 months. Also, afterwards, coaching is offered to the facilities (Radix 2015b).

In terms of delivery system, in the majority of cantons, a division or subdivision of the cantonal administration is in charge of programme management (BL, GR, LU, SG, and ZG). Basel-Stadt provided a performance mandate to a private, non-profit organisation, Thurgau to *Perspektive Thurgau*, which is a municipal administration union that is specialised in disease prevention and health promotion, and Uri to the external organisation that carries out the health promotion and prevention policies on behalf of the canton (see footnote 80).

Policy design and characteristics

Restaurant food nutrition labelling aims at promoting healthy out-of-home eating. Moreover, it is to raise the awareness of the importance of a balanced diet. Thus, it ties in with the more general goals of preventing health risks and diseases associated with malnutrition, e.g. obesity, cancer and cardiovascular diseases. Essentially, labelling combines two measures: the labelling proper and the coaching of management and staff of catering facilities on the principles and practices of preparing healthy food. As can be seen from Table 25 and Table 26 on the next page, coaching and labelling address the same direct and indirect target groups; they are tied together through horizontal packaging (see page 38).

Table 25: Fourchette verte: components of the policy design

	Coaching	*Labelling*
Objective	Enabling catering facilities to prepare healthy meals and to comply with the other FV-criteria	Promoting the supply of healthy out-of-home catering; raising awareness of the importance of healthy nutrition
Action content	Transfer of knowledge on planning and preparing healthy meals	Adherence to standards on healthy nutrition and environment
Direct target group	Catering facilities	Catering facilities
Indirect target group	Customers of catering facilities	Customers of catering facilities
Tools	Consultancy, training	Certification
Delivery system	Cantonal FV section (non-profit organisations predominantly)	Cantonal FV section, certification committee

Table 26: schnitz und drunder: components of the policy design

	Coaching	*Labelling*
Objective	Enabling catering facilities to prepare healthy meals and to comply with the other s&d-criteria	Promotion of supply of healthy out-of-home catering; raising awareness of the importance of healthy nutrition
Action content	Transfer of knowledge on planning and preparation of healthy meals	Adherence to standards of healthy nutrition, preservation of nutrients, sustainability, involvement of children, positive table culture
Direct target group	Institutions that cater for children and adolescents	Institutions that cater for children and adolescents
Indirect target group	Children and adolescents	Children and adolescents
Tools	Consultancy, training	Certification
Delivery system	Cantonal administrative division on health promotion and prevention (predominantly)	Cantonal administrative division on health promotion and prevention (predominantly)

Under both systems, coaching is to provide the management and staff of foodservice establishments with theoretical and practical knowledge on the preparation of healthy food. This knowledge transfer is based on the tools of consultancy and training. Catering facilities that agree to be labelled and those that are already labelled are the direct target group of the policy measure, i.e. eating places generally (FV) or establishments that cater for children and adolescents (s&d). Their customers are intended to benefit from the knowledge that catering businesses acquire.

In the case of FV, an organisation that is given a performance mandate by the canton is usually in charge of the programme and consults catering outlets. In most cantons awarding the label s&d, a staff member of the specialised cantonal unit on health promotion and prevention offers this service.

Labelling is to provide an additional incentive to foodservice establishments to offer balanced meals. Its aim is to increase the supply of healthy-out-home catering. As detailed before, the action content of labelling differs somewhat between FV and s&d in that they do not apply exactly the same standards.

The direct and indirect target groups of labelling are the same as for coaching. In the case of s&d, coaching and labelling are delivered by one institution. For FV, a labelling committee complements the delivery system.

Since eating out of home at midday is widespread and FV targets all types of catering facilities, the general population is effectively the designated beneficiary of FV. s&d targets children and adolescents for benefits since only facilities that cater for this age group can obtain the label.

Participation of catering facilities in the respective labelling system is voluntary.[153] Presupposing that customers and parents of children and adolescents value a healthy nutrition, labelling might offer a competitive advantage to certified facilities (e.g. if parents give preference to childcare centres that offer healthy meals). In other words, the awarding of the label creates an incentive for foodservice establishments to comply with policy-makers' intentions because otherwise they forego a potential benefit. The level of coercion is lower medium. From the perspective of the direct target group, restaurant food nutrition labelling touches upon an important – and for restaurants, cafés, self-service restaurants and communal catering facilities, even the core – activity. Both labels include detailed, specific and comprehensive requirements on the types and quantities of aliments, the composition and preparation of individual dishes and the compilation of daily and weekly menus. Criteria in other areas complement these stipulations. Given these detailed instructions on the nature of behavioural change desired, the policy entails a lower medium level of intrusion. The degree of intervention is low.

FV and s&d are composed of two policy measures (coaching and labelling); the policy scope is hence coded as medium. Given its subdivision into six sublabels, each of which sets out detailed standards, the content of FV is a highly calibrated. While s&d is not differentiated into sublabels and therefore entails a lower level of calibration than FV, it still involves a set of detailed instructions. Hence, the level of calibration of s&d is classified as medium. In general, a single nutritionist, who is employed by an existing cantonal administrative unit, administers s&d. Policy adoption is thus often associated with the creation of a new position within an existing organisation. In the case of FV, a new implementation structure is usually created, which consists of a cantonal FV section and a labelling committee. In view of these differences, the automaticity of s&d is classified as high, the one of FV as low. Irrespective of certain differences, the design of both policies is complex.

In 2003, the budget of the cantonal section of FV in Geneva amounted to CHF 184 000, with cantonal subsidies accounting for CHF 150 000 of this amount (FV 2015a: 31). Basel-Landschaft allocated CHF 50 000 in 2008 for implementing s&d (Regierungsrat des Kantons Basel-Landschaft 2008). Thus, the implementation costs of both policies are high. However, those of FV clearly exceed those of s&d.

Table 27: Restaurant food nutrition labelling: characteristics of the policy design

Policy characteristic	*Dimension*	*Value*
Designated beneficiaries	-	FV: **More comprehensive than children/adolescents** s&d: **Children/adolescents**
Degree of intervention	Coerciveness	Lower medium
	Intrusiveness	Lower medium
	Overall	**Low**
Complexity	Scope	Medium
	Calibration	FV: High s&d: Medium
	Automaticity	FV: Low s&d: High
	Overall	**High**
Implementation costs	-	**High**

[153] Cantons or municipalities are in a position to exert pressure on certain types of communal catering facilities (e.g. childcare facilities, school canteens), though. They can make labelling mandatory or limit subsidies to certified facilities. Such pressures, if present, would result in higher levels of coercion.

Federal and national context

At the federal level, there have been no endeavours to introduce a labelling system for foodservice establishments. However, as part of the National Programme on Diet and Physical Activity 2008-2012, the federal government funded a research project on catering for healthy out-of-home eating, which resulted in the publication of quality standards for health-promoting communal catering (cf. good practice 2015).

In December 1999, CLASS initiated the establishment of the national association of FV (*Fédération Fourchette verte Suisse*, FV-CH), with the support of Health Promotion Switzerland. FV-CH was created to support existing cantonal FV sections and to promote the dissemination of the policy to other cantons. Over the years, the association devised several adaptations of the label and harmonised and standardised the requirements and processes of labelling across the cantons. As a result, detailed guidelines on each sublabel and other tools are available to cantonal FV-sections. From 2000 onwards, Health Promotion Switzerland provided funding to the national association and the cantonal sections of FV. Since 2007, Health Promotion Switzerland funds cantonal action programme that aim at promoting a healthy body weight. Both FV and s&d constitute modules suggested by Health Promotion Switzerland for inclusion into these programmes. Cantons are free to decide what modules they adopt, though.

Table 28: Restaurant food nutrition labelling: coding of point-source diffusion variables, 1993-2013

Factor of influence	*Coding of variable*	*Justification*
Financial incentives	1993-1999: 0	Neither positive nor negative financial incentives
	2000-2006: 0[154]	
	2007-2013: 1	Funding of cantonal action programmes by Health Promotion Switzerland
Technical assistance	1993-1999: 0	No technical assistance provided
	2000-2013: 1	Provision of technical assistance through FV-CH (plus provision of technical assistance for s&d through RADIX)
Strong signal about appropriate course of action	1993-2013: 0	No such signal
Concrete prospect of federal policy making	1993-2013: 0	No federal bill tabled or popular initiative filed

[154] Strictly speaking, the value should be 1 since Health Promotion Switzerland provided funding for the creation of cantonal FV-sections from 2000 onwards. However, this form of financial support coincides with the foundation of the national association and thus cannot be tested separately.

6 Statistical Methods and Data

In addressing the research questions raised in Chapter 1, statistical analyses that are based on ***event history analysis*** (EHA) will be carried out. The datasets used for this purpose join data from a variety of primary and secondary sources. This chapter describes the methods of statistical analysis and the data employed. Being divided into two subchapters, the first subchapter outlines the basics of EHA, introduces the different types of event history models that will be estimated and clarifies various modelling issues. Chapter 6.2 provides an overview of the variables that will be accounted for in the various models. It sets out their operational definitions, lists the data sources that they come from, discusses data limitations and provides information on the steps taken in preparing the data.

6.1 Event History Analysis: Logic and Application to the Present Research Endeavour

The basics of EHA

"***Events***" indicate the transition from one state to another and EHA models the whether and when of events occurring (Box-Steffensmeier/Jones 2004: 1, 7). It traces the history, i.e. the period of time up to the event (or the end of the observation period, respectively). Due to its concern with the duration of processes, the method is also called "duration analysis". In medical research, engineering and other disciplines, event history processes are often conceived of as "failure-time processes" since they observe units, such as patients or machines, until they fail, i.e. experience death or break-down (Box-Steffensmeier/Jones 2004: 7). Accordingly, "survival models" is another name for event history or duration models. The concepts of "survival" and "failure" reflect the origins of EHA in biostatistics (Box-Steffensmeier/Jones 2004: 7). In policy diffusion research, policy adoption typically figures as the event to be explained (for other dependent variables, see page 8).

EHA has several strengths: Most fundamentally, it accounts for the temporal dimension of social or other phenomena (Box-Steffensmeier/Jones 2004: 2). Moreover, event history models allow for the inclusion of time-varying covariates and thus for assessing the effects of changes in covariates over time (Box-Steffensmeier/Jones 2004: 10). EHA can also accommodate censoring. Censoring – or more precisely, right-censoring – occurs if event histories are incomplete because the observation period ends before all units have experienced the event (see Box-Steffensmeier/Jones 2004: 10, 16-19).[155] Given that right-censoring is omnipresent in datasets on policy adoption and that many explanatory factors of particular interest to diffusion research vary over time (e.g. the public salience of an issue), EHA provides a versatile framework for analysing whether, when and why policies are adopted. Hence, it is not surprising that EHA, which Berry and Berry (1990) introduced to policy diffusion research, has found widespread favour among the scholarly community and has been taken up in countless research articles (thus representing an instance of diffusion in diffusion research). As will be detailed below, EHA is also highly suitable for addressing the research interest of this study.

Manifold approaches to event history modelling exist, with one distinction referring to continuous versus discrete models. Both revolve around the time until event occurrence, but they differ in terms of the conception of event history processes and/or the measurement of the dependent variable. ***Continuous models*** assume that events can occur at any time, with measures of the length of time (usually in days, months or years) that elapses before the event occurs (or, in the case of right-censoring, the observation period ends) serving as the dependent variable (Box-Steffensmeier/Jones 2004: 69).[156] ***Discrete models*** record event occurrences at discrete points in time, either because event history processes are inherently discrete or because data on continuous processes exist for discrete

[155] Left-censoring refers to failures that occur prior to the beginning of the observation period and are hence excluded from the respective study (Box-Steffensmeier/Jones 2004: 16, fn. 3).

[156] For an overview of continuous duration models, see Box-Steffensmeier and Jones (2004: 21-67).

points in time only (Box-Steffensmeier/Jones 2004: 69). Analyses of policy adoption are typically based on discrete EHA, which is described below.

Discrete EHA disaggregates the observation period into distinct time intervals (in policy diffusion studies, usually years) and records for each time interval and unit of analysis (e.g. a jurisdiction at the local, subnational or state level) if the latter is still at risk of the event or has experienced it during the interval (Box-Steffensmeier/Jones 2004: 69-70). Observations that are still at risk (in policy diffusion research, the non-adopters of a policy) are coded 0, while observations that have experienced the event (policy adopters) are coded 1. This procedure yields a binary dependent variable. After event occurrence, the units affected drop out of the dataset as they are no longer at risk of failure (in the policy diffusion context, jurisdictions are removed from the dataset in the year after adoption).[157] As a result, in discrete EHA, duration times are reflected in the number of entries on each unit of analysis in the dataset (Box-Steffensmeier/Jones 2004: 69-70).

To illustrate the structure of datasets in discrete EHA: If the units of analysis are the Swiss cantons, the observation period stretches from 1993 to 2013 (being divided into years) and the event is policy adoption, the dataset contains one entry on each canton and year between 1993 and 2013 up to the year in which a canton adopts the policy. Policy-years thus constitute the observations. If a canton innovates in 1998, the dataset comprises six records that pertain to this canton. The first five ones (for the years 1993-1997) are coded 0 and the sixth one, for 1998, is coded 1. These six entries correspond to the duration time of six years until policy adoption. From 1999 onwards, the canton is no longer in the dataset because it has ceased to be at risk of adopting the policy. Thus, with successive policy adoptions, the number of canton-years that each year in the observation period adds to the dataset becomes smaller.

Event occurrence constitutes the manifest dependent variable, but EHA effectively models the ***latent conditional hazard probability***, i.e. the probability that the event occurs at a given point of time, provided that is has not occurred before (Box-Steffensmeier/Jones 2004: 71). In mainstream policy diffusion studies, EHA models the probability (or likelihood) of policy adoption. Event history models condition the hazard probability on time and usually on predictors that are of theoretical interest in the respective area (such as internal determinants and diffusion effects in policy diffusion research). Maximum likelihood estimation is generally used to estimate the coefficients of event history models.

Selection and specification of models

In line with most policy diffusion studies, the models estimated in Chapters 7 and 8 will be based on discrete EHA.[158] Two types of discrete event history models will be estimated: ***Single event models*** will provide the basis for explaining the adoption of individual policies (Chapter 7) and for comparing the strength of effects of various explanatory variables across policies with different characteristics (Chapter 8.28.1). ***Multiple events models***, in turn, will be employed to directly assess the impact of policy design characteristics (Chapter 8.3).

Single event models are appropriate for situations where the units observed may transition from one state to another one once (Box-Steffensmeier/Jones 2004: 155). As the adoption of a specific policy is concerned, single event models are a suitable specification of failure-time processes. This is because the jurisdictions observed are at risk of one transition only (i.e. from non-adoption to adoption). They cannot adopt the same policy twice – unless the policy was terminated meanwhile. During the

[157] This applies to single event models, which assume that each unit of analysis can experience the event only once.

[158] Most policy diffusion studies focus on policy adoptions that manifest in parliamentary decisions. Parliaments do not convene in plenary sitting throughout the entire year. Therefore, one might argue that processes that lead to policy adoption are inherently discrete in nature.

observation period of this study, no instances of policy termination occurred, though.[159] Moreover, due to the focus on model diffusion (cf. page 36), adoptions of policies that pursue the same objective as the policy of interest, but are based on different designs are disregarded. Thus, on both conceptual and empirical grounds, multiple events models – i.e. repeated events or competing risks models – do not match cantonal innovation decisions on the adoption of individual public health policies.[160] Rather, single event models are the suitable framework for analysis.

Similar to Berry and Berry (1990, 2007: 237), the single event models are specified as follows:

$$ADOPT_{i,t} = f\,(INTERNAL_{i,t},\ EXTERNAL_{i,t})$$

Thus, the likelihood that a particular canton ("i") adopts the policy of interest in a given year ("t") is modelled to be a function of explanatory factors that divide into two groups: internal determinants ($INTERNAL_{i,t}$), which entail the political, economic and social characteristics of the canton in a specific year, and diffusion effects ($EXTERNAL_{i,t}$), which result from interdependent decision making among cantons and from federal and national influences as prevailing in the respective year.[161]

To recapitulate, a single event set-up captures one-time transitions of units of analysis from some state to a singular destination (e.g. from non-adoption to adoption). In contrast, ***multiple events models*** apply to either of two constellations (Box-Steffensmeier/Jones 2004: 155): (1) Units of analysis are at risk of failing once, transitioning to one among several states (e.g. from non-adoption to adoption of either policy A, B or C). (2) Units of analysis are at risk of failing more than once – i.e. within the observation period, they may experience the same type of event several times (e.g. adopting various components of a specific policy, cf. Boehmke 2009) or may experience different types of events (e.g. adopting any of policies A, B and C).

In selecting the appropriate multiple events model, two considerations are relevant (cf. Box-Steffensmeier/Jones 2004: 156): Are the events at stake of the same type? And, do events occur in some natural order? In the present context, Swiss cantons are at risk of events of different types: They cannot adopt the same policy several times (in the absence of policy termination). However, they may adopt the policies studied in any order. No natural sequence of policy adoptions exists among the public health policies of interest.

There is no agreed-upon classification of multiple events models (cf. Box-Steffensmeier/Jones 2004: 155). The models estimated in Chapter 8.3 may be termed "***stratified competing risk models***". They qualify as competing risks models because the units observed are at risk of events of different types. Unlike in the classic competing risks set-up, the units of analysis can experience each of the events under study, though (cf. Box-Steffensmeier/Jones 2004: 175-178). The models are stratified as policy fixed effects are entered to account for differences in event-specific hazard rates (for further details, see the next section).

The joint analysis of adoptions of different policies based on a multiple events framework allows for a direct assessment of the impact of policy design characteristics. For that purpose, the policy attributes of interest will be entered into the multiple events models on policy adoption as a third group of

[159] Successions of policy adoption, termination and re-adoption are amenable to EHA. Their analysis requires a specific repeated events set-up.

[160] Cantonal adoptions of restaurant food nutrition labelling could be framed in another way, though. Instead of predicting the adoption of any of the two existing labels, cantonal decisions on whether to adopt one or the other label (or none) could be modelled. In that case, a competing risks model would be the correct specification (cf. Box-Steffensmeier/Jones 2004: 166-181).

[161] In this equation, "$INTERNAL_{i,t}$" covers "$MOTIVATION_{i,t}$", "$RESOURCES/OBSTACLES_{i,t}$", and "$OTHER\text{-}POLICIES_{i,t}$", as specified by Berry and Berry (2007: 237) (see page 8). Since the cantons did not adopt any policies that are complementary to, conditions for, or substitutes of the six policies of interest, the models presented in the following chapters will not include any variables that pertain to the category "$OTHER\text{-}POLICIES_{i,t}$".

independent variables ($POLICIES_p$). In addition, two interaction terms will be provided for. They trace whether the effects of internal determinants and policy diffusion are contingent on the attributes of the policies studied:

$$ADOPT_{p,i,t} = f\,(INTERNAL_{i,t},\ EXTERNAL_{i,t},\ POLICIES_{p,}\ POLICIES_p{*}INTERNAL_{i,t},\ POLICIES_p{*}EXTERNAL_{i,t})$$

Besides containing an additional group of explanatory factors and related interaction terms, this equation differs from the specification of the single event models above in that multiple policies are pooled into one model (hence the subscript "p").[162] Datasets that allow for the estimation of such models contain one record for each combination of policies, jurisdictions and years studied. Thus, policy-state-years constitute the observations.

Modelling issues

Apart from the determination of types of event history models to be estimated, a number of modelling issues have to be settled, including (1) the delineation of the ***observation period***, (2) the ***intervals*** that the observation period is divided into, (3) the choice of the ***link function*** between the probabilities estimated and the linear predictors, (4) the modelling of ***time dependency***, (5) the **correction for *serial correlation***, (6) the ***time lagging of independent variables***, (7) the ***selection of covariates*** for the various types of models to be estimated and (8) the handling of ***heterogeneity*** of processes that lead to different types of events in multiple events models:

(1) For reasons of data availability, the ***observation period*** for all analyses presented in the following chapters ends in 2013. As to the beginning of the observation period, the relevant question is when the respective failure-time process starts. As Box-Steffensmeier and Jones (2004: 8) point out, the determination of the starting point is a theoretical issue. Processes that lead to policy adoption often do not have a natural starting point.[163] Many scholars define the year in which the first state in their sample adopts the policy of interest as the starting point (e.g. Berry/Berry 1990; Allen et al. 2004; Shipan/Volden 2006). As the policy idea that manifests in policy adoption often has been around for some time before the first government puts it into practice, defining an earlier starting point can make sense in substantive terms, too. This study observes the cantons from the first instance of cantonal policy adoption onwards – mostly for practical reasons. Data on most of the internal determinants accounted for are not available for the period prior to 1990. Since two of the policies studied were pioneered already in 1993, it is not possible to observe the cantons from several years prior to the first adoption onwards.

(2) The study period is disaggregated into ***years***. The annual periodicity of most secondary data inhibits a more fine-grained analysis of cantonal innovation and diffusion processes.[164]

(3) Logit models have become the standard in policy diffusion research. To render the results of this study comparable to previous research, ***logit models*** on cantonal policy adoptions are estimated. Hence, the standard logistic distribution serves as the function that maps the linear predictors (i.e. $INTERNAL_{i,t}$, $EXTERNAL_{i,t}$, $POLICIES_p$) into the probability of policy adoption.

(4) Whatever functional form is chosen, discrete event history models yield flat hazard probabilities with respect to time, if ***time dependency*** is not accounted for (Box-Steffensmeier/Jones 2004: 75). Put differently, unless measures of time are included, the likelihood of policy adoption remains

[162] As outlined in Chapter 3.1, the policy attributes studied are constant across adopters and time. Hence, they are subscripted with „p" only. The designated beneficiaries of restaurant food nutrition labelling are an exemption, though (see Chapter 5.5).

[163] In some instances, however, the point in time at which jurisdictions begin to be at risk of policy adoption is clearly identifiable. For example, if a supreme court declares an existing legal practice to be unconstitutional and the governments concerned decide to replace it with new legislation, the court decision marks the onset of a period of policy innovation.

[164] Recording the values of the dependent variable and the diffusion variables for every individual month would be straightforward, though. A more fine-grained analysis might yield a more precise understanding of the effects of internal determinants and diffusion on policy adoption.

constant throughout the observation period. This is an unrealistic assumption. Various forms of modelling temporal dependence have been devised, such as time dummies and smoothening functions of time, including cubic splines (Beck et al. 1998). This study follows the recommendation made by Carter and Signorino (2010a), which is to include ***time*** (i.e. a time counter variable that records the years that passed since the beginning of the observation period), ***time squared*** and ***time cubed*** into the models. It does so because Carter and Signorino (2010a) show this approach to be more easily implemented than cubic splines, while performing equally well.[165]

(5) In discrete EHA, the units of analysis enter the dataset multiple times. As described above, single event models contain multiple observations on each unit. For the values of the dependent and independent variables are recorded for each individual time interval until the unit drops out of the dataset. In multiple events models, there are even more observations per unit, with event occurrences being recorded not only for each time interval, but also for each of the events studied. As a result, the observations in discrete EHA are ***serially correlated***, which violates the assumption of conditional independence (Buckley/Westerland 2004: 104; Box-Steffensmeier/ Jones 2004: 114-115). That is why standard errors need to be estimated that are robust to this violation of conditional independence (cf. Box-Steffensmeier/Jones 2004: 114-115). For the single event models, ***Huber/White robust standard errors*** clustered by canton are reported. Drawing on Shipan and Volden (2006: 833) and Makse and Volden (2011: 114), standard errors are clustered by canton-year in the multiple events models. In all models, the clustering procedure available in Stata 12 is used.

(6) In order to reduce the risk that policy adoption is attributed to a change in predictors that in fact occurs at the same time or even after adoption (see Box-Steffensmeier/Jones 2004: 110-112), most of the independent variables (see Chapter 6.2) are ***lagged*** by one year. The variables on left-party strength are an exemption. With policy adoption depending on the endorsement by the relevant institution, predictor and dependent variable need to be quasi-simultaneous.[166]

(7) The predictors that shape cantonal innovation decisions are likely to vary by both issue and characteristics of the policy. Hence, different ***covariates*** (i.e. internal determinants and diffusion effects) will be accounted for in the single event models that are presented in Chapter 7. As a prerequisite for the comparison across policies, the single event models that figure in Chapter 8.2 are based on a broad common set of covariates, though. In the multiple events models in Chapter 8.3, a broad set of covariates that comprises all explanatory factors that were found relevant in the single event models will be accounted for.

(8) The processes that generate different types of events (such as the adoptions of diverse policies) are heterogeneous. Multiple events models, which pool various events into one equation, must take this heterogeneity into account. The multiple events models estimated in this study handle this heterogeneity – as far as the sample allows for – through the inclusion of policy fixed effects and policy-by-covariate interactions (see Chapter 8.3 for a more detailed elaboration).

6.2 Feeding the Models: Categories of Variables, Data Sources and Data Processing

Categories of variables accounted for and measurement issues

While the specification of the individual models is reserved to Chapters 7 and 8, an overview of the variables that figure in the analyses is given here, with internal determinants corresponding to seven

[165] For the ensuing debate on the relative merits of spline functions and Carter and Signorino's approximation, see Beck (2010) and Carter and Signorino (2010b).

[166] The ideological orientations of decision makers in the years prior to policy adoption might be relevant in terms of agenda-setting and policy formulation. To account for this, lagged party composition variables could additionally be included in the models. Since the composition of political institutions usually changes only every so many years, this approach probably does not hold much analytical leverage, though.

theoretical concepts: (1) ***problem severity***, (2) ***government ideological preferences***, (3) ***interest group pressures***, (4) ***policy-making capacity***, (5) ***state fiscal situation***, (6) ***state interventionism***, and (7) ***producer pressures***.[167] Table 29 at the end of this section summarises these internal determinants.[168] Below, theoretical concepts and various measurement issues are detailed.

Problem severity stands for the "objective reality" of the problem that the policy deals with (rather than its public salience). An indicator of problem severity that applies to all six policies studied and that measures the scope of the public problem addressed in a comparable way across policies is desirable. Regarding the public problems at stake, five policies aim at reducing a behaviour that is harmful to health (i.e. tobacco consumption, alcohol abuse or unhealthy diets), while one strives for the early detection of a specific disease (i.e. breast cancer). Ultimately, the policies revolve around the primary or secondary prevention of diseases, either one particular disease or multiple diseases that are associated with a particular risk factor (e.g. smoking and the increased risks for cardiovascular and respiratory diseases and cancer). Thus, the burden that these diseases impose on individuals and society could serve as the common metric in measuring problem severity across policies (cf. Armstrong et al. 2006: 734). For the individual, being ill is associated with a loss of quality of life or even premature death. Society at large incurs both direct costs in the form of health care expenditure and indirect costs, such as the loss of labour productivity (cf. Armstrong et al. 2006: 736-737).

Although no complete measure of the burden of diseases exists, several aspects are amenable to measurement (Armstrong et al. 2006: 737). In fact, epidemiologists and health economists have devised multiple indicators that capture the prevalence or incidence of, or mortality from, specific diseases, combine morbidity and mortality into single measures or reflect healthcare, economic or other costs. However, most of these measures are based on complex estimations. As a result, data on indicators such as mortality rates, disability- or quality-adjusted life years, or the direct or indirect societal costs that are attributable to various health risks or diseases often exist for the national level and for individual years only. For example, while statistical sources provide longitudinal data on breast cancer mortality for each canton, times-series data on tobacco-related deaths exist only for the country as a whole (see BFS 2009a). Cross-cantonal, longitudinal data that measure the relevant public health problems in a fully comparable way are therefore not available.

The following indicators of problem severity are available from secondary sources: prevalence of smoking, risky alcohol consumption and overweight respectively, and breast cancer mortality.[169] Given that these indicators regularly figure in statistical as well as policy documents, they are easily accessible to policy makers. While not qualifying as fully comparable measures across policies, they should thus at least clearly show whether the objective scope of public problems matters for the adoption of public health policies.

Since the empirical focus of this study rests on public health, ***ideological preferences*** are understood as "[…] assumptions about whether the ultimate responsibility for health lies with the individual or with society, and whether the government has a right, or even a responsibility, to regulate individual behaviour and commercial activity to protect and promote the public good." (Cohen et al. 2000: 263). As proxy measures for the ideological positions of cantonal decision makers on public health, the party composition of political institutions is used. Swiss left-wing parties highlight the social determinants of health and advocate a strong role of governments in health policy. Centrist and rightist parties, in contrast, emphasise the individual responsibility for health. They generally reject state intervention

[167] Due to data limitations, three types of internal determinants that are relevant in theoretical terms cannot be accounted for: legislative professionalism, public opinion and salience of the policy issue.

[168] For the sake of completeness, Table 30 at the end of this section assembles the operational definitions of policy adoption, implementation, diffusion and characteristics from previous chapters. For an elaboration of these variables, see Chapters 3.2, 4.3 and 5.

[169] Breast cancer incidence would be more comparable to the three other indicators, but canton-specific data are lacking for many cantons (cf. NICER 2015a).

into the private lives of individuals and the economy and give preference to market self-regulation. Therefore, government ideological preferences are measured as the strength of leftist parties in cantonal governments and parliaments and the party affiliation of cantonal health ministers.[170]

Various organised groups may exert pressure on cantonal decision makers and marshal support for, or opposition to, specific public health policies. ***Organised interests*** range from public health advocacy groups (e.g. health leagues, professional associations, patient organisations) to interest groups that represent specific economic sectors (e.g. the tobacco industry) or economic interests more generally (e.g. trade and employers' associations). Interest groups vary by issue area. Regarding data availability, time-series data on the number or strength of lobbyists or the number of, or resources available to, organisations that are active in specific issue areas in the Swiss cantons do not exist. However, sources of secondary data do provide one relevant indicator: the staff levels of organisations in cantonal public health sectors, defined as organisations that aim at the promotion of health, e.g. the cancer leagues and the Samaritans (BFS 2008: 238).

Policy-making capacity is a function of the availability of professional human resources for policy analysis and formulation in the field of interest. Both cantonal administrations and parliaments command such resources. For the legislative branch, policy-making capacity follows from the level of professionalization of parliaments. Since legislative professionalism entails several aspects (e.g. the compensation of legislators, the length of parliamentary sessions, the size of parliamentary services), multi-dimensional indices are the most valid measures of the concept. As several observers note, there has been a clear trend towards the professionalization of cantonal parliaments since the early 1990s (Bochsler et al. 2004: 36; Trippolini 2007; Jaun 2011: 34). For that reason, it is important to measure legislative professionalism with annual data or data that at least cover the beginning, the middle and the end of the observation period. Unfortunately, longitudinal data do not exist for the Swiss cantons, neither on composite measures nor on individual dimensions.[171] That is why the models estimated will not take legislative professionalism into account.

Inside the administrative branch, executive commissions, specialist units of the central administrations and external organisations that work under a performance mandate are involved in cantonal policy making on public health (see Chapter 4.1). Because of the major differences in cantonal organisational structures, the collection of primary data on executive policy-making capacity proved too demanding. Secondary sources do not provide such data, either. Therefore, this study relies on a proxy measure instead: the density of cantonal administrations (i.e. the number of public administration staff per 1000 residents in the canton). This indicator reflects the concept of interest in that it measures the scale of human resources that cantons have at their disposal. It is not specific to the area of public health, though.

The ***fiscal situation of the state*** is specified in terms of the balance of the cantonal budget, i.e. the proportion of government revenue to spending.[172] As can be seen from Table 29 on page 108, the

[170] The following national or inter-regional parties were coded as leftist parties: Swiss Social Democratic Party, Swiss Green Party, feminist and green-alternative groupings, Christian Social Party, the *Ring of Independents* (LdU) and the Workers' Party (PdA). So were several canton-specific left-wing parties.

[171] Jaun (2011) provides data on the Squire index of legislative professionalism for the cantonal parliaments for one point in time, i.e. the mid- to late 2000s (depending on the availability of data for each canton). Various sources contain data on one or another dimension of legislative professionalism, with the most important one being BADAC, the database on the Swiss cantons and cities (IDHEAP 2015). Yet, BADAC does not cover the period of observation as needed for the analyses.

[172] Cantonal public debts would be an alternative specification. However, the budgetary situation is more likely to shape innovation decisions on expensive policies.

revenue-to-spending ratio was transformed so that it gives the relative budget surplus or deficit respectively in a given year.[173]

Due to differences in ***state-interventionist traditions***, which reflect more general and long-standing ideological preferences of political elites and citizens, the public sectors of some cantons are more extensive than those of others. State interventionism is measured as the spending-to-GDP ratio.

Public health policies may restrain or further the activities of economic sectors. Economic actors may therefore push for, or work against, the adoption of such policies. What type of reaction a policy triggers is likely to depend on its attributes, particularly its designated beneficiaries and degree of intervention. Based on the assumption that the level of potential pressure is positively related to the economic weight of the respective sector, the value that the sector adds to the cantonal economy would be the most valid measure. Because of the lack of such data, the models estimated will account for employment level of the sector concerned – more precisely, employment in production. ***Producer pressures*** thus approximate the influence that one important segment of economic actors affected by public health policies might exert during decision-making processes.

Tobacco growers and manufacturers are the relevant producers in the field of tobacco control policy. As alcohol prevention policies are concerned, wine growers and the planters of other fruits and crops used for alcohol production as well as alcohol producers make up the production sector. Foodservice establishments, which include restaurants, cafés and bars, communal catering facilities (e.g. school, university and business canteens) and the catering units of care facilities (such as hospitals, childcare centres, day-care facilities and homes for diverse groups), are the producers affected by restaurant food nutrition labelling. Radiology centres and departments produce the services delivered under breast cancer screening programmes.[174]

Thanks to the Business Census (BC) and the Statistics on Enterprise Structure (SES), employment data on all economic branches exist (see Table 29). In some instances, these data cannot be disaggregated in a way that fully corresponds to the concepts just outlined, but most indicators are close to the respective concept. The data on employment in tobacco cultivation are exhaustive. Regarding the workforce involved in the cultivation of crops that are used for the production of alcoholic beverages, only the figures on wine growing can be used.[175] The variables on tobacco manufacturing and alcohol production cover employment almost fully, with the latter capturing establishments that produce spirits, wine, cider, beer, vermouth and similar beverages (cf. BFS 2008: 31-32). The indicator on the catering sector covers restaurants, cafés and bars, but not the catering units of care facilities.[176] Finally, the two measures that pertain to the radiology sector embrace the radiologists that practice in each canton, but do not cover the number of radiologist assistants.[177]

[173] Concretely, the government revenue-to-spending ratio for the canton was multiplied by 100 and then the value of 100 was deducted.

[174] As producers, radiologists have an economic stake in breast cancer screening programmes. At the same time, they are an important implementation resource since programmes cannot be put in operation without a sufficient number of radiologists and radiology assistants practicing in the canton.

[175] Other agricultural products that can be fermented or distilled are mostly used for purposes different from alcohol production. The statistical sources mentioned before do not allow singling out the share of employees who cultivate crops destined for alcohol production. Being a crop grown mainly for beer brewing, hops are one exception. However, workers who cultivate hops figure in a more general statistical category (i.e. the growing of spice plants; BFS 2008: 7-8). Again, they cannot be extracted from this relevant category and added to the employment level in alcohol production.

[176] Employment data on care facilities are provided for in the BC and SES, but the number of staff involved in catering tasks cannot be identified.

[177] The data come from the Physicians' Statistics. While longitudinal data on the number of radiologist assistants do not exist, Lehmann et al. (2012) provides cross-sectional figures.

In conceptual terms, it is important to point out that the figures on employment in production do not fully reflect the importance of the sector to cantonal economies. Tobacco industry can illustrate this point: Three major international tobacco companies operate in Switzerland and divide almost the entire market among them (Swiss Cigarette 2015). The three companies maintain a strong presence in Switzerland where they do not only produce for the Swiss, but also for the worldwide market. Besides being an important manufacturing base, Switzerland also hosts other large divisions of these companies (e.g. research and development; vending and operations centres; international headquarters) (Swiss Cigarette 2015). The indicator described in Table 29 covers tobacco growing and manufacturing, but it does not cover the staff employed in other units of tobacco companies. Nor does it entail employment in tobacco wholesale or retail trade. Because of the classification system that governs the employment statistics used, an indicator of employment in all tobacco-related activities cannot be constructed from existing sources.[178] For the alcohol sector, the situation is similar. Nevertheless, the figures on alcohol and tobacco production reflect the economic activities most directly affected by the policies studied.

[178] This is because several activities are part of wider categories that pertain to cantonal economies as a whole (e.g. research and development as part of "research in the areas of natural, engineering, agricultural sciences and medicine"; BFS 2008: 194). In these instances, employment cannot be disaggregated by sector.

Table 29: Internal determinants: operational definitions, data sources used and years covered

Type of explanatory factor	*Variable*	*Operational definition*	*Data sources*	*Years covered*
Problem severity	Prevalence of smoking	Percentage of individuals who smoke at least one cigarette a day (among population aged 15+) in the canton/region	Swiss Health Survey (FSO/Obsan)	1992, 1997, 2002, 2007, 2012
	Prevalence of overweight	Percentage of individuals whose BMI equals or exceeds 25 (among population aged 18+) in the canton/region	Swiss Health Survey (FSO/Obsan)	1992, 1997, 2002, 2007, 2012
	Prevalence of risky alcohol consumption	Percentage of women with a daily consumption of 20g of pure alcohol or more and percentage of men with a daily consumption of 40g of pure alcohol or more (among population aged 15+) in the canton/region	Swiss Health Survey (FSO/Obsan)	1997, 2002, 2007, 2012
	Deaths from breast cancer	Number of deaths from breast cancer among women in the canton during five-year period	Cause of Death Statistics (FSO/NICER) (NICER 2015b)[179]	1987-1991, 1992-1996, 1997-2001, 2002-2006, 2007-2011

[179] Cancer data extracted from the Swiss national dataset managed by the Foundation National Institute for Cancer Epidemiology and Registration (NICER).

Table 29: Internal determinants: operational definitions, data sources used and years covered (continued)

Type of explanatory factor	*Variable*	*Operational definition*	*Data sources*	*Years covered*
Ideological preferences	Strength of left parties in parliament	Proportion of left-party seats in cantonal parliament	FSO (BFS 2015a); cantonal websites; Année politique suisse (IPW 1990-2013)	1990-2013: annual data
	Strength of left parties in government	Proportion of ministers with left-party affiliation in cantonal government	Publicus (1989/1990-2012); cantonal websites; NZZ online archive; WorldStatesmen.org (2015)	1990-2013: annual data
	Strength of left parties in parliament and government	Proportion of left-party members of cantonal parliament and government combined	See above	1990-2013: annual data
	Left-party affiliation of health minister	Dummy = 1 for cantonal health minister belonging to a left party	Publicus (1989/1990-2012); cantonal websites; NZZ online archive; WorldStatesmen.org (2015)	1990-2013: annual data
Interest group pressures	Strength of public health organisations	Number of public health organisation employees in the canton per 1000 employees (in full-time equivalents)	Business Census (BFS 2015b); since 2011: Statistics on Enterprise Structure (BFS 2015b)	1995, 2001, 2005, 2008, 2011, 2012
Policy-making capacity	Density of administration	Number of cantonal administration employees (in full-time equivalents) per 1000 population	Business Census (BFS 2015b); since 2011: Statistics on Enterprise Structure (BFS 2015b); ESPOP/STATPOP (BFS 2015d, 2015e)	1991, 1995, 1998, 2001, 2005, 2008, 2011, 2012
State fiscal situation	Relative budget surplus/ deficit	Cantonal budget surplus/deficit as percentage of government spending	Financial Statistics (EFV 2015a)	1990-2011: annual data
State interventionism	Size of public sector	Government spending-to-GDP ratio for the canton (in %)	Financial Statistics (EFV 2015a); BAKBASEL	1990-2011: annual data

Table 29: Internal determinants: operational definitions, data sources used and years covered (continued)

Type of explanatory factor	*Variable*	*Operational definition*	*Data sources*	*Years covered*
Producer pressures	Tobacco production	Number of employees in tobacco cultivation and manufacturing in the canton per 1000 employees (in full-time equivalents)	Business Census (BFS 2015b); since 2011: Statistics on Enterprise Structure (BFS 2015b)	1995, 2001, 2005, 2008, 2011, 2012
	Alcohol production	Number of employees in winegrowing and alcohol production in the canton per 1000 employees (in full-time equivalents)	See above	See above
	Restaurant sector	Number of employees in catering facilities in the canton per 1000 employees (in full-time equivalents)	See above	See above
	Radiology industry	Number of radiologists in the canton per 1000 employees (in full-time equivalents)	Radiologists: Physicians' Statistics (FMH 2015); Business Census (BFS 2015b); since 2011: Statistics on Enterprise Structure (BFS 2015b)	1990-1994: annual data, 1996, 1998-2012: annual data
Other	Day-care sector for children	Number of employees in childcare facilities in the canton per 1000 employees (in full-time equivalents)	Business Census (BFS 2015b); since 2011: Statistics on Enterprise Structure (BFS 2015b)	See above
	Density of radiologists	Number of radiologists in the canton per 1000 population	Radiologists: Physicians' Statistics (FMH 2015); ESPOP/STATPOP (BFS 2015d, 2015e)	1990-1994: annual data, 1996, 1998-2012: annual data

Table 30: Policy adoption, implementation, diffusion and characteristics: operational definitions, data sources used and years covered

Type of variable	*Variable*	*Operational definition*	*Data sources used*	*Years covered*
Dependent variable	Policy adoption	Dummy = 1 for enactment of legal provision, appropriation decision, issuance of ordinance or similar type of authoritative decision	Cantonal statutes (cf. Appendix); FV-CH (2003-2015); Radix (2015c); swiss cancer screening (2015a)	1990-2013: annual data
Auxiliary variable	Policy implementation	Dummy = 1 for entry into force of legal provision or for onset of service delivery	Cantonal statutes (cf. Appendix); FV-CH (2003-2015); Radix (2015c); swiss cancer screening (2015a)	1990-2013: annual data
Regional diffusion	Regional diffusion 1	Proportion of previous adopters among members of the same CMPH-region	Own calculation based on policy adoption variable	1991-2013: annual data
	Regional diffusion 2	Proportion of previous implementers among members of the same CMPH-region	Own calculation based on policy implementation variable	1991-2013: annual data
Point-source diffusion	Financial incentives	Dummy = 1 for provision of funding for the particular policy by the federal government or a national organisation	Various policy documents (see Chapters 5.1-5.5)	1990-2013: annual data
	Technical assistance	Dummy = 1 for provision of technical assistance for implementation of the particular policy by the federal government or a national organisation	Various policy documents (see Chapters 5.1-5.5)	1990-2013: annual data
	Signal about appropriate course of action	Dummy = 1 for federal government signing international treaty that requires adoption of the particular policy or for endorsement of the particular policy by the CMPH	Various policy documents (see Chapters 5.1-5.5)	1990-2013: annual data
	Concrete prospect of federal policy making	Dummy = 1 for federal bill or popular initiative that includes the particular policy being pending	Curia Vista (Bundesversammlung 2016b)	1990-2013: annual data

Table 30: Policy adoption, implementation, diffusion and characteristics: operational definitions, data sources used and years covered (continued)

Type of variable	*Variable*	*Operational definition*	*Data sources used*	*Years covered*
Policy characteristics	Designated beneficiaries	Dummy = 1 for children's policy (i.e. children/ adolescents being the direct or indirect target group)	Same sources as for "policy adoption"	1990-2013
	Degree of intervention	Dummy=1 for highly-interventionist policy (i.e. policy that scores "upper medium" or "high" on both coerciveness and intrusiveness)		
	Complexity	Dummy = 1 for complex policy (i.e. policy that entails a wide scope, high level of calibration and/or low degree of automaticity)		
	Implementation costs	Dummy = 1 for policy with high implementation costs (i.e. at least CHF 50 000 as disclosed in government budgets)		
	Policy type	Dummy = 1 for policy with low degree of intervention and high levels of complexity and implementation costs		

Data sources, processing and limitations

Table 29 also list the sources of information used in compiling the datasets, which include legal texts, policy documents, yearbooks of Swiss political life, the database of parliamentary proceedings of the Federal Assembly (Curia Vista), websites, academic publications and several sources of secondary statistical data. Secondary data was processed to tailor it to the needs of the analyses. Data preparation included standardisation, linear inter- and extrapolation, other forms of imputation, smoothing and time lagging (cf. page 103).

For various indicators, standardisation served the purpose of rendering the values comparable across cantons (e.g. adjustments for differences in population size) and time (e.g. adjustments for inflation). In the case of incomplete time-series data (see the last column in Table 29 on the years covered by the particular source of information), linear inter- and extrapolation was used for imputing missing values. For most indicators with missing values, data had to be extrapolated for one or two years at most. Usually, missing values pertain to the last year in a series of annual data that follow a stable time trend. In these cases, linear extrapolation seems unproblematic. The time-series data on employment levels in various economic sectors are an exception, though. Here, the time series start in 1995 only. Thus, depending on how the observation period is set, backward extrapolation over a period of several years is needed.[180] In extrapolating these values, the Stata command used draws on the 1995 and 2001 values of the respective series, which are the two closest data points available. The extrapolated values for the period prior to 1995 thus mirror the linear trend that the data exhibit between 1995 and 2001. Some economic branches of interest experienced substantial changes in employment levels within the latter period. Thus, the extrapolation of employment figures to the period 1990 to 1994 sometimes yields data points that are significantly lower or higher than the 1995 values. As the real values before 1995 are unknown and the basis for extrapolation is not robust, the imputed values should be used with reservations only.

In the employment data that inform the measures of the strength of public health organisations, the density of cantonal administrations and various producer pressures a break in the time series exists that results from the substitution of the Business Census (BC), which the (1991), 1995, 2001, 2005 and 2008 values are taken from, with the Statistics on Enterprise Structure (SES), the source of the 2011 and 2012 data. Both sources provide census data on the number and various attributes of Swiss businesses and are based on the same system of classification of economic activities. However, BC and SES differ in terms of methods of data collection, periodicity and coverage of enterprises and employees.[181] As SES uses lower thresholds for the inclusion of enterprises and employees, it conveys a more complete picture of the economy and reports higher employment figures. Owing to these changes in methodology, employment data that represent the situation before 2011 are not fully comparable to data for 2011 and subsequent years. A conversion of either the BC-data used in this study into SES-values or vice versa is not feasible, though.[182] Presumably, the methodological changes have small effects on most of the employment-based indicators used since micro enterprises and persons marginally employed are likely to be rare in the individual branches of interest to this study – public health organisations might be an exception, though.

[180] Data collection for the Business Census reaches back to 1905, but data before 1995 are not to comparable to more recent ones (BFS 2015b, 2015c).

[181] BC used to be carried out three times per decade, was based on survey data and covered all places of work (*Arbeitsstätten*) with a total minimum working time of 20 hours per week and all employees that worked at least 6 hours per week (BFS 2009b). SES provides annual data compiled from administrative registers and supplemented with survey data. It covers all enterprises that employ persons who are subject to compulsory old-age insurance (i.e. who earn an income of at least CHF 2300 per year at present) and all employees who fulfil the latter criterion (BFS 2015c).

[182] The Swiss Federal Statistical Office (FSO) provides simulated SES-values for 2005 and 2008. However, these exist only at much higher levels of aggregation than needed for the purposes of this study.

Furthermore, regarding the indicator "density of cantonal administrations", the staff levels of public administrations in a few cantons exhibit significant changes that occur within a few years only. Cross-checking these distinctive developments in cantonal statistical sources confirmed that they are mostly due to public sector restructuring leading to the reclassification of specific units (e.g. the classification of hospitals as administrative units at one point in time and as public enterprises at another time). Such changes are statistical artefacts rather than "true" changes in policy-making capacity. Therefore, locally weighted scatterplot smoothing was used to attenuate the resultant changes in employment levels.

For the prevalence data on risky health behaviours, missing values result from the quinquennial periodicity of the Swiss Health Survey (see Table 29) on the one hand and from incomplete canton-specific data on the other hand.[183] Here, the following procedure of imputation was used: Cantons that had no specific data for the entire period of observation were assigned the prevalence rates of the relevant region. In the case of cantonal data being available for some, but not for all waves of the survey, the values for the missing data collection points were imputed based on the trend in the relevant region. Having thus imputed values for each canton and each survey wave (i.e. 1992, 1997, 2002, 2007, 2012), data for the remaining years was inter- and extrapolated.

[183] The sampling design of the Swiss Health Survey allows for disaggregation of the data by seven geographical regions. Cantonal data can be disclosed only if the cantons pay for an increase in sample size. The 1992 wave of the survey provides for specific data on nine cantons, while in 2012 such data were available for 19 cantons.

7 Explaining the Adoption of Individual Cantonal Public Health Policies

Chapter 7 sets out to explain the adoption of four of the cantonal public health policies of interest: ban on tobacco billboard advertising (Chapter 7.1), ban on tobacco sales to children and adolescents (Chapter 7.2), breast cancer screening programmes (Chapter 7.3) and restaurant food nutrition labelling (Chapter 7.4). Each subchapter describes the specification of the models estimated, before presenting the results.[184] Chapter 7.5 summarises the findings across policies, highlighting the overall research interest of the study.

7.1 Ban on Tobacco Billboard Advertising

Model specification

Based on the review of previous studies on the diffusion of antismoking policies (Chapter 2.4), the specification of policy diffusion (Chapter 4.3), the description of the federal context of cantonal policy making and the characteristics of the policy (Chapter 5.1) as well as the discussion of data sources available (Chapter 6.2), the factors presented in Table 31 below are identified as likely and testable predictors of cantonal adoptions of the ban on tobacco billboard advertising.

Table 31: Ban on tobacco billboard advertising: explanatory factors

Type of explanatory factor	*Variable and operational definition*	*Expected impact*
Regional diffusion	Regional diffusion 1: Proportion of previous adopters in CMPH-region (t-1)	Positive
	Regional diffusion 2: Proportion of previous implementers in CMPH-region (t-1)	Positive
Point-source diffusion	Signal about appropriate course of action: Signing of WHO FCTC	Positive
Problem severity	Prevalence of smoking: Percentage of smokers (t-1)	Positive
Ideological preferences	Strength of left parties in parliament: Proportion of left-party seats in cantonal parliament	Positive
Interest group pressures	Strength of public health organisations: Employees of public health organisations per 1000 employees (t-1)	Positive
Producer pressures	Tobacco production: Employees in tobacco cultivation and manufacturing per 1000 employees (t-1)	Negative

Diffusion research shows decision making on U.S. smoking and cigarette out-of-pack sales restrictions to be interdependent among neighbouring states (Shipan/Volden 2006; McCann et al. 2015). In the Swiss context, previous policy adoptions in the CMPH-region that a canton belongs to are expected to render the adoption of the ban on tobacco billboard advertising more likely (cf. page 65). Two variants of the regional diffusion variable are tested: the proportion of cantons in the region that had adopted the policy before the year of interest and the proportion of cantons that had implemented it within that period of time (see page 65). Since the policy design is fairly simple (cf. page 73), cantons that are at risk of policy adoption are unlikely to attach more weight to the policy being implemented than

[184] The small numbers of adoptions of the bans on takeout alcohol sales at night and on alcohol sales at petrol stations (one and five, respectively) rule out separate analyses on these policies. Given the limited variance on the dependent variable, almost any model specification would lead to an overfitted model. However, the two policies can and will be included in the multiple events models in Chapter 8.3.

being adopted by other governments. Hence, the implementation-based regional diffusion variable is unlikely to outperform the adoption-based one.

Besides regional diffusion, earlier research points to the relevance of top-down influences for the adoption of antismoking policies (cf. Shipan/Volden 2006). In the present context, the signing of the WHO FCTC by the federal government in 2004 (see page 75) might have increased the legitimacy of the policy and thus encouraged cantonal policy adoptions.

Apart from diffusion, four internal determinants are accounted for – problem severity, ideological preferences, interest group and producer pressures. Smoking prevalence is used as a measure of the scope of the public health problem that the ban on tobacco billboard advertising addresses. So far, the evidence on the impact of the severity of smoking-related health problems on the adoption of antismoking problems is inconclusive (see page 28). Yet, if problem severity makes a difference, the likelihood of policy adoption should be positively associated with the percentage of smokers in the canton.[185]

Leftist cantonal policy makers may be expected to be more prone to push for the adoption of the ban than their centrist and rightist colleagues, in particular in view of the highly interventionist nature of the policy (cf. page 73). Previous research findings (see page 28), the circumstances of the first cantonal adoption and the manifestation of party positions on the issue at the federal level lend support to this expectation: A left-wing parliamentary group initiated the policy in the pioneering canton (see page 70). In their statements during the pre-consultation of the federal-level Tobacco Products Act (see page 74), the Social Democratic Party and the Swiss Green Party, i.e. the two most important parties in the left spectrum of the party system, did not only advocate a ban on tobacco outdoor advertising, but demanded a total advertising ban (BAG 2015g). In contrast, the rightist Swiss People's Party and FDP The Liberals resolutely rejected the restrictions on advertising entailed in the bill, including the ban on billboard advertising. The Christian Democratic People's Party and the Conservative Democratic Party, both centrist parties, also questioned the tobacco advertising restrictions envisaged, but did not dismiss them quite as firmly as the right-wing parties did (BAG 2015g). Since the ban on tobacco billboard advertising needs parliamentary approval (unless it is tabled as a popular initiative), the party composition of cantonal parliaments (rather than left-party strength in government or the party affiliation of the cantonal health minister) is used as a measure of ideological preferences.

Moreover, the likelihood of policy adoption is expected to be a positive function of the strength of public health organisations in the canton. Again, some earlier research findings (see page 30) and information available from the pre-consultation of the Federal Tobacco Products Act supports this expectation. The public health organisations that commented on the bill advocated even stricter restrictions on tobacco advertising and sponsoring than a ban on billboard adverts (BAG 2015h).

In line with the findings of several earlier studies (Shipan/Volden 2006; Toshkov 2013; McCann et al. 2015; see page 29), policy innovation is expected to be negatively related to the scope of tobacco growing and manufacturing in the canton.[186] Probably due to the high degree of intervention that the policy entails (see page 73), the tobacco industry (as the advertising sector) clearly expressed its opposition to the ban when commenting on the Federal Tobacco Products Act (BAG 2015i).

[185] In diffusion research, the share of smokers is also used as a proxy measure of the level of public support of the policy, which suggests a negative relationship between the variable and the likelihood of policy adoption (see page 28). Smoking prevalence is more closely linked to the concept of problem severity than to that of public policy support, though.

[186] The ban on tobacco billboard advertising also affects the advertising sector and, due to the extension to alcohol adverts in most cantons, the alcohol industry. Alternative specifications of producer pressures that include these branches do not yield significant effects, though.

As described before (see page 71), the ban on tobacco billboard advertising was under judicial review between September 2000 and March 2002. The appeal at the Federal Supreme Court is likely to have slowed down the spreading of the ban.[187] As a matter of fact, no single cantonal adoption occurred during that time period. For exactly that reason, the impact of judicial appraisal cannot be estimated in the models below, though. This is because the inclusion of a dummy variable that captures this aspect of the policy process leads to quasi-separation and renders maximum-likelihood estimation impossible.

Results

Table 33 on the next but one page reports the results of six logit models estimated on cantonal adoptions of the ban on tobacco billboard advertising. These differ in terms of the explanatory factors included. The first one limits itself to the internal determinants specified above. The second one adds the adoption-based regional diffusion variable; the third one does so for the implementation-based regional diffusion variable. Model 1d inserts the point-source diffusion variable instead. The fifth model includes the full set of explanatory factors. Finally, the reduced model (1f) concentrates on those predictors that proved to be statistically significant in Model 1e. For the descriptive statistics on the data used in estimating the models, see Table 32 below.

Table 32: Ban on tobacco billboard advertising: descriptive statistics of variables, 2000-2013

	Mean	Standard deviation	Min.	Max.	Obs.
Policy adoption	0.058	0.233	0	1	261
Regional diffusion 1 (adopters) (t-1)	0.199	0.258	0	0.714	261
Regional diffusion 2 (implementers) (t-1)	0.171	0.245	0	0.714	261
Signal about appropriate course of action (signing of WHO FCTC)	0.517	0.501	0	1	261
Prevalence of smoking (t-1)	23.7	2.8	18.8	33.9	261
Strength of left parties in parliament	0.253	0.133	0	0.531	261
Strength of public health organisations (t-1)	0.3	0.4	0	3.3	261
Tobacco production (t-1)	2.2	5.4	0	21.4	261

Before interpreting the results, it is important to point out that a closer inspection of the models shows that the combination of highly skewed independent variables and the relatively small number of policy adoptions causes a situation that is close to quasi-separation for two variables, i.e. left-party strength in cantonal parliaments and strength of public health organisations. This explains why the sizable coefficients on these variables translate into noticeable changes in predicted probabilities only for very particular changes on the covariate (e.g., for an increase from the 75th percentile to the maximum value of the respective predictor) and why the effects then are large (e.g. an increase by 95 percent in predicted probabilities). Since this renders the interpretation of the effects difficult, the below illustration of the strength of effects is limited to tobacco production.

In turning to the results, we find that smoking prevalence makes no difference for the likelihood of cantonal adoptions of the ban on tobacco billboard advertising, with the estimated coefficients being insignificant in all models. In contrast, left-party strength in cantonal parliaments, strength of public health organisations and tobacco production show the expected impact. Regardless of the particular model specification, cantons where a sizable share of parliamentary seats are allotted to left parties, where public health organisations are relatively strong and where a small fraction of the workforce is employed in tobacco growing and manufacturing are more likely to adopt the advertising ban.

[187] The ruling of the Federal Supreme Court in 2002 might have heightened the awareness of the policy among policy makers and the public, thus rendering cantonal adoptions of the advertising ban more likely in the aftermath. The effect of a dummy variable that captures the court decision is statistically insignificant, though.

Surprisingly, neither of the diffusion variables exhibits the expected impact on policy adoption. Regional diffusion and the signing of the WHO FCTC consistently fail to reach statistical significance in the models estimated.

Drawing on the reduced model in Table 33 and focusing on the year 2007 (when the diffusion of the policy was well underway, cf. page 71), the following estimation conveys an impression of the impact of tobacco production on policy adoption: For a canton with average left-party strength and strength of public health organisations, a shift from the minimum to the maximum level of employment in tobacco growing and manufacturing reduces the probability of the advertising ban being adopted by 28.3 percent (95% confidence intervals (CI): -44.7, -11.9 percent).

Thus far, bans on billboard advertising for tobacco products have not been addressed in studies on policy adoption (cf. Table 1). The findings of this subchapter on the likelihood that the Swiss cantons adopt the ban on tobacco billboard advertising between 2000 and 2013 are consistent with the results of earlier research on other antismoking policies (cf. Chapter 2.4) in terms of the relevance of government ideology, producer pressures and interest group strength. Different from previous studies on the adoption of antismoking policies, neither interdependent decision-making among proximate jurisdictions nor vertical influences shape cantonal innovation decisions on the advertising ban, though.

Table 33: Logit models on the adoption of the ban on tobacco billboard advertising, 2000-2013

		(1a) Internal determinants	(1b) Plus regional diffusion 1	(1c) Plus regional diffusion 2	(1d) Plus point-source diffusion	(1e) Complete model	(1f) Reduced model
Regional diffusion	Regional diffusion 1 (adopters) (t-1)		-1.480			-1.501	
			(2.167)			(2.189)	
	Regional diffusion 2 (implementers) (t-1)			-0.535			
				(2.650)			
Point-source diffusion	Signal about appropriate course of action (signing of WHO FCTC)				-1.264	-1.285	
					(1.776)	(1.722)	
Problem severity	Prevalence of smoking (t-1)	0.063	0.109	0.073	0.051	0.098	
		(0.207)	(0.234)	(0.226)	(0.206)	(0.231)	
Ideological preferences	Strength of left parties in parliament	7.143*	7.352*	7.191*	7.533*	7.734*	7.422*
		(3.174)	(3.408)	(3.230)	(3.341)	(3.547)	(3.360)
Interest group pressures	Strength of public health organisations (t-1)	5.670***	5.594***	5.668***	5.890***	5.824***	5.684***
		(1.131)	(1.140)	(1.135)	(1.150)	(1.170)	(1.124)
Producer pressures	Tobacco production (t-1)	-2.931***	-2.851***	-2.895***	-2.964***	-2.881***	-2.879***
		(0.674)	(0.640)	(0.660)	(0.705)	(0.670)	(0.616)
Controls	t	-3.698*	-3.643*	-3.681*	-3.868**	-3.812**	-3.799**
		(1.498)	(1.491)	(1.511)	(1.306)	(1.312)	(1.377)
	t^2	1.226***	1.225***	1.223***	1.342***	1.342***	1.238***
		(0.360)	(0.352)	(0.361)	(0.322)	(0.323)	(0.352)
	t^3	-0.088***	-0.087***	-0.087***	-0.097***	-0.096***	-0.088***
		(0.023)	(0.023)	(0.024)	(0.022)	(0.022)	(0.023)
	Constant	-8.801	-10.18	-9.120	-8.765	-10.16	-7.169***
		(6.147)	(7.054)	(6.720)	(6.154)	(7.014)	(1.355)
	N	261	261	261	261	261	261
	Years	14	14	14	14	14	14
	Wald Chi^2	57.82***	49.87***	55.80***	53.26***	46.00***	57.41***
	McFadden's R^2	0.448	0.454	0.449	0.452	0.458	0.448
	AIC	79.32	80.75	81.28	80.87	82.28	77.42

Legend: Robust standard errors in parentheses, clustered by canton: # p < 0.1, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

7.2 Ban on Tobacco Sales to Children and Adolescents

Model specification

As a tobacco prevention policy like the ban on outdoor advertising, the ban on sales to children and adolescents might be expected to be driven by the same explanatory factors as the former. Shipan and Volden (2006), e.g., find that similar predictors account for U.S. state adoptions of out-of-pack sales restrictions, which are intended to render cigarettes less accessible to minors, as for smoking restrictions in government buildings and restaurants. Accordingly, the models estimated on the ban on tobacco sales to children and adolescents draw on the same set of explanatory variables as the models on the advertising ban in Chapter 7.1.[188]

However, the bans on tobacco sales to children and adolescents and on tobacco billboard advertising differ in that the design of the former clearly designates it as a youth protection measure (cf. page 79). There are some indications that this difference in policy design might have fundamental implications for the policy process. The heightened legitimacy of measures that prevent children and teenagers from smoking might attenuate ideological differences among policy makers and producer pressures that emanate from the tobacco industry.

In line with this supposition, the comments of political actors on the federal-level draft Tobacco Products Act (see page 8074) reveal that, compared to other measures, the envisaged ban on tobacco sales to minors is much less controversial. Even tobacco growers and manufacturers and their associations expressed their support for a Swiss-wide ban during pre-consultation of the bill (BAG 2015i).[189] Differences in party positions on this issue also proved to be smaller. Apart from the Social Democrats and the Greens, the Christian Democrats and the Conservative Democrats unequivocally endorsed the ban on tobacco sales to minors entailed in the draft legislation (BAG 2015g). The two rightist parties rejected a federal sales bans, though. FDP The Liberals argued that the decision should be left to the cantons, while the Swiss People's Party rejected the entire bill, characterising it as an undue intrusion into private lives and economic freedoms alike (BAG 2015g).

Against this background, it is unclear whether to expect the various internal determinants to shape the likelihood of policy adoption – hence the brackets in Table 34.

[188] There is one exception: Regardless of when the observation period starts, the impact of the point-source diffusion variable cannot be estimated here. This is because the first adoption of the ban on tobacco sales to children and adolescents occurred after the signing of the WHO FCTC. Hence, the inclusion of a dummy variable for signing of the convention leads to quasi-separation, rendering maximum-likelihood estimation impossible.

[189] On the other hand, the tobacco industry did not have much to lose from a federal ban since by then the sales ban had been effective in 22 cantons.

Table 34: Ban on tobacco sales to children and adolescents: explanatory factors

Type of explanatory factor	*Variable and operational definition*	*Expected impact*
Regional diffusion	Regional diffusion 1: Proportion of previous adopters in CMPH-region (t-1)	(Positive)
	Regional diffusion 2: Proportion of previous implementers in CMPH-region (t-1)	(Positive)
Problem severity	Prevalence of smoking: Percentage of smokers (t-1)	(Positive)
Ideological preferences	Strength of left parties in parliament: Proportion of left-party seats in cantonal parliament	(Positive)
Interest group pressures	Strength of public health organisations: Employees of public health organisations per 1000 employees (t-1)	(Positive)
Producer pressures	Tobacco production: Employees in tobacco cultivation and manufacturing per 1000 employees (t-1)	(Negative)

Results

Table 36 on the next page presents the results of three logit models on cantonal adoptions of the ban on tobacco sales to children and adolescents. The first one is restricted to internal determinants; the second and the third ones add the regional diffusion variables. For the descriptive statistics on the data used in estimating the models, see Table 35 below.

Table 35: Ban on tobacco sales to children and adolescents: descriptive statistics of variables, 2005-2013

	Mean	Standard deviation	Min.	Max.	Obs.
Policy adoption	0.169	0.377	0	1	124
Regional diffusion 1 (adopters) (t-1)	0.378	0.300	0	0.857	124
Regional diffusion 2 (implementers) (t-1)	0.293	0.299	0	0.833	124
Prevalence of smoking (t-1)	23.3	2.2	18.8	28.3	124
Strength of left parties in parliament	0.269	0.140	0	0.523	124
Strength of public health organisations (t-1)	0.4	0.5	0	2.7	124
Tobacco production (t-1)	2.5	5.9	0	21.4	124

As Table 36 shows, none of the substantive explanatory variables contributes to the understanding of cantonal adoptions of the ban on tobacco sales to children and adolescents. Thus, the likelihood of policy adoption is unrelated to the prevalence of smoking, the strength of left parties in parliament, the strength of public health organisations and tobacco production. Neither does regional diffusion shape cantonal innovation decisions. Only the variables that control for time dependence exhibit significant effects. What is more, the overall model fit is low, with all three models failing to reach statistical significance.

Thus, the spreading of the ban on tobacco sales to children and adolescents among the Swiss cantons seems to follow a political logic that is different from the one governing the ban on tobacco billboard advertising and other antismoking policies that provided the empirical basis of previous studies (see Chapter 2.4). None of the predictors commonly accounted for in models on tobacco control policies holds analytical leverage for explaining the adoption of the sales ban. Most likely, the fact that the policy is clearly designed to protect children and adolescents from a behaviour that is nowadays acknowledged to be highly damaging to health, prompted it to spread like wildfire. Its pattern of fast diffusion (see Figure 10 on page 77) resembles the spreading of morality policies (cf. Mooney/Lee 1995; Boushey 2010) – with one highly consequential difference: Hardly any opposition to the ban seems to be mounted. As a result, the extent of adoptions exceeds those of most morality policies.

Table 36: Logit models on the adoption of the ban on tobacco sales to children and adolescents, 2005-2013

		(1a) Internal determinants	(1b) Plus reg. diffusion 1	(1c) Plus reg. diffusion 2
Regional diffusion	Regional diffusion 1 (adopters) (t-1)		-2.530 (2.021)	
	Regional diffusion 2 (implementers) (t-1)			-0.867 (2.725)
Problem severity	Prevalence of smoking (t-1)	-0.116 (0.124)	-0.107 (0.122)	-0.118 (0.123)
Ideological preferences	Strength of left parties in parliament	3.798 (2.705)	4.065 (2.842)	3.831 (2.739)
Interest group pressures	Strength of public health organisations (t-1)	0.250 (0.944)	0.097 (0.964)	0.200 (0.992)
Producer pressures	Tobacco production (t-1)	-0.106 (0.066)	-0.113 (0.075)	-0.108 (0.069)
Controls	t	1.417# (0.766)	1.876* (0.864)	1.441# (0.794)
	t^2	-0.550* (0.239)	-0.569* (0.242)	-0.512* (0.237)
	t^3	0.050* (0.020)	0.049* (0.021)	0.046* (0.020)
	Constant	-0.382 (2.811)	-0.612 (2.796)	-0.352 (2.789)
	N	124	124	124
	Years	9	9	9
	Wald Chi^2	9.638	11.46	9.795
	McFadden's R^2	0.094	0.106	0.095
	AIC	118.2	118.9	120.1

Legend: Robust standard errors in parentheses, clustered by canton: # p < 0.1, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

7.3 Breast Cancer Screening Programmes

Model specification

Breast cancer screening programmes have not been the subject of previous diffusion research. Yet, at least one case study analyses the determinants of the adoption of such programmes: In explaining the introduction of mammography screening for breast cancer in four Danish counties, Hjulmann et al. (2008) focus on seven explanatory factors: scientific evidence on the safety and effectiveness of screening, ethical issues, different recommendations of a national health advisory board, local-level financial and personnel resources, level of political agreement, roles of bureaucrats and physicians and a residual category of miscellaneous other factors. They observe a similar combination of these factors to be at work in the two counties that did not adopt mammography screening programmes within the period of observation, with negative assessments of scientific evidence, ethical issues, advisory board recommendations and inadequate implementation resources being particularly decisive. The two adopters have the availability of implementation resources in common, but differ in terms of relevance of most other factors.

When drawing on findings of this case study, the description of the federal and national policy context in Switzerland and the design of breast cancer screening programmes (cf. Chapter 5.4) as well as the discussion of data sources available (Chapter 6.2), the factors assembled in Table 37 suggest themselves as potential predictors of cantonal policy adoptions.[190]

[190] For reasons of limited resources, data on scientific evidence on the policy becoming available throughout the observation period and on public perceptions of scientific evidence and ethical issues could not be compiled.

Table 37: Breast cancer screening programmes: explanatory factors

Type of explanatory factor	*Variable and operational definition*	*Expected impact*
Regional diffusion	Regional diffusion 1: Proportion of previous adopters in CMPH-region (t-1)	Positive
	Regional diffusion 2: Proportion of previous implementers in CMPH-region (t-1)	Positive
Point-source diffusion	Financial incentives: Commitment to cover mammography exams under obligatory health insurance and actual coverage	Positive
	Technical assistance: Provided by swiss cancer screening	Positive
Problem severity	Deaths from breast cancer: Number of women dead within five-year period	Positive
Ideological preferences	Strength of left parties in parliament and government: Proportion of left-party members in parliament and government (averaged)	Positive
Interest group pressures	Strength of public health organisations: Employees of public health organisations per 1000 employees (t-1)	Positive
Policy-making capacity	Density of administration: Employees of cantonal administration per 1000 employees (t-1)	Positive
State interventionism	Size of public sector: Government-spending-to-GDP ratio (in %) (t-1)	Positive
State fiscal situation	Relative budget surplus/deficit: Surplus/deficit as percentage of government spending (t-1)	Positive
Implementation resources	Density of radiologists: Radiologists per 1000 population	Positive

To begin with, innovation decisions are likely to be subject to diffusion effects. Breast cancer screening programmes are based on a highly complex policy design and involve high implementation costs (see page 90). Because of these characteristics, previous policy adoptions by cantons that belong to the same CMPH-region are likely to decisively shape the innovation decisions of cantons that have not yet adopted the policy. Further, due to the complexity of the design and the fact that many uncertainties pertain to the implementation stage, instances of successful programme establishment are expected to convey the type of information that cantonal decision makers are most interested in. Therefore, the implementation-based regional diffusion variable should hold more explanatory power than the adoption-based one.

As regards point-source diffusion, both the federal decision to cover screening-mammography under obligatory health insurance and the establishment of the national association of breast cancer programmes, which provides technical assistance, are expected to have positively shaped the likelihood of cantonal adoptions. Coverage under obligatory health insurance disburdens cantons from a sizable share of implementation costs, thus helping to lower a major obstacle to innovation. Accordingly, Hjulmann et al. (2008) report that the prospect of central government funding becoming available in the near future contributed to programme introduction in one of the counties. In view of the complexity of screening programmes, technical assistance is likely to constitute another resource for overcoming the obstacles to adopting such programmes.

In terms of internal determinants, the absolute number of deaths from breast cancer among women (in a five-year period; cf. Table 29) is used as an indicator of the severity of the public health problem that screening programmes deal with. In cantons with a small population size, the number of lives potentially saved due to breast cancer screening is relatively small (see Table 38). In setting up a screening programme, cantons incur sizable fixed costs. It is quite conceivable that cantons are not

willing to bear these costs if the number of lives potentially saved is small. Against this background, the absolute number of deaths (instead of the mortality rate) is used as a measure of problem severity.

Furthermore, the combined strength of left parties in government and parliament is expected to affect the likelihood of policy adoption. The establishment of breast cancer screening programmes requires the consent of parliaments and governments. Cantonal parliaments need to authorise funding, while governments have the policy-making expertise required for launching the policy. Hence, the average representation of left parties in the two institutions is used as indicator of ideological preferences. Moreover, cantons that have a more state-interventionist tradition are surmised to be more likely to introduce the policy.

Due to the complexity and costs of the policy, innovation decisions in favour of screening programmes are expected to be a positive function of the policy-making capacities and fiscal balance of the canton. What is more, screening programmes can only be made to work if a sufficient number of radiology personnel are available. In fact, Hjulmann et al. (2008) identify availability of financial and personnel resources as one of the most decisive factors for the adoption of breast cancer screening programmes in the four Danish counties studied.

Results

Table 39 presents the results of seven logit models on the adoption of breast cancer screening programmes (for descriptive statistics, see Table 38 below). Besides the controls for time dependence, the first one features exclusively the internal determinants that are deemed relevant. In models 3b to 3e, the various diffusion variables are added one after another. Model 3f contains the full set of explanatory variables, while model 3g limits itself to the substantive predictors that are statistically significant. Before looking at the results, it should be noted that – similar to the models on the ban on tobacco billboard advertising (see page 117) – the large coefficients on the density of radiologists and on the size of the public sector seem to result from a situation that approximates quasi-separation. The illustrations of effect strength below exempt these variables.

Table 38: Breast cancer screening programmes: descriptive statistics of variables, 1993-2013

	Mean	Standard deviation	Min.	Max.	Obs.
Policy adoption	0.027	0.162	0	1	448
Regional diffusion 1 (adopters) (t-1)	0.110	0.195	0	1	448
Regional diffusion 2 (implementers) (t-1)	0.083	0.171	0	1	448
Financial incentives (mammography exams covered under obligatory health insurance)	0.612	0.488	0	1	448
Technical assistance (provided by swiss cancer league)	0.183	0.387	0	1	448
Deaths from breast cancer	257	297	10	1435	448
Strength of left parties in parliament and government	0.232	0.125	0	0.552	448
Strength of public health organisations (t-1)	0.2	0.2	0	1.3	448
Density of administration (t-1)	17.1	9.2	7.6	58.2	448
Size of public sector (t-1)	14.3	2.9	8.5	26.8	448
Relative budget surplus/deficit (t-1)	-.156	5.237	-26	19	448
Density of radiologists (t-1)	0.0	0.0	0	0.2	448

In turning to the results, we find a clear indication of regional diffusion – across all models. In other words, the Swiss cantons are the more likely to introduce a screening programme, the more common such programmes are in the CMPH-region that they belong to. As evident from the comparison of models 3b and 3c in terms of the Akaike information criterion (AIC), the model using the percentage

of previous implementers in the region as the specification of regional diffusion performs slightly better than the one using the share of adopters. The difference is small, though.

The coefficients on the dummy variable that records the commitment of the federal government to include mammography screenings into the catalogue of benefits paid for under obligatory health insurance are consistently positive as expected, but fail to reach statistical significance. On substantive grounds, it seems unlikely that breast cancer screening programmes would have spread if cantons had to shoulder the full burden of programme costs. In statistical terms, we cannot say so with certainty, though.

As regards the establishment of "swiss cancer screening", i.e. the association of cantonal programmes for the early detection of cancer, the measure included in models 3e and 3f is positively related to the adoption of cantonal programmes, but clearly fails to reach statistical significance.

Contrary to expectation, differences in the absolute number of deaths attributable to breast cancer do not explain the likelihood that cantons adopt a screening programme, given that the estimated coefficients are hardly different from zero. Across models, the coefficients on left-party representation in political institutions exhibit the expected sign (except for model 3f), but are statistically insignificant. More general and longstanding ideological preferences in favour of state intervention, as manifest in public sector size, are associated with a higher likelihood of cantons opting for organised breast cancer screening, though.

The picture on the impact of potential obstacles to innovation and the resources available to overcome such obstacles is not entirely consistent. As expected, cantons that exhibit a budget surplus (i.e. a state resource for policy implementation) and a high density of radiologists, which is a societal resource for implementation, are more likely to adopt a screening programme. However, the estimated coefficient on density of cantonal administrations is negative and significant in all models. So, counterintuitively, cantons with lower policy-making capacities show a higher probability of adoption. As described in Chapter 6.2, density of administration is a proxy variable for the concept of interest, i.e. the resources for policy analysis and formulation in public health that cantons have at their command. While the indicator used might not adequately measure the underlying concept, it is still surprising that it yields significant negative coefficients. Finally, strength of public health organisations is not associated with innovation decisions in favour of the policy: While the estimated coefficients exhibit the expected sign, they fail to reach significance.

In estimating predicted probabilities based on model 3g, looking at the year 2007 and holding all remaining predictors constant at their means, a shift from the minimum to the maximum percentage of previous implementers in the region increases the likelihood of policy adoption by 19.9 percent (CI: -0.1, 44.8). The same type of change on the relative budget surplus/deficit variable renders programme adoption 5.4 percent more likely (CI: -4.2, 15.0).

Table 39: Logit models on the adoption of breast cancer screening programmes, 1993-2013

		(3a) Internal determinants	(3b) Plus regional diffusion 1	(3c) Plus regional diffusion 2	(3d) Plus financial incentives	(3e) Plus technical assistance	(3f) Complete model	(3g) Reduced model
Regional diffusion	Regional diffusion 1 (adopters) (t-1)		3.127**					
			(1.164)					
	Regional diffusion 2 (implementers) (t-1)			3.459**			3.874**	3.739***
				(1.161)			(1.209)	(1.097)
Point-source diffusion	Financial incentives (exams covered under obligatory health insurance)				8.369		9.465	
					(5.566)		(5.935)	
	Technical assistance (provided by swiss cancer league)					1.030	0.497	
						(2.327)	(2.484)	
Problem severity	Deaths from breast cancer	0.001	0.000	0.000	0.001	0.001	0.001	
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	
Ideological preferences	Strength of left parties in parliament and government	3.082	0.341	0.515	2.350	3.111	-0.630	
		(2.218)	(2.599)	(2.568)	(2.458)	(2.342)	(2.733)	
Interest group pressures	Strength of public health organisations (t-1)	1.219	1.338	1.177	1.206	1.261	1.164	
		(0.967)	(1.272)	(1.280)	(0.942)	(0.994)	(1.352)	
Policy-making capacity	Density of administration (t-1)	-0.146*	-0.167*	-0.169*	-0.144*	-0.149*	-0.175*	-0.182*
		(0.074)	(0.081)	(0.084)	(0.071)	(0.074)	(0.077)	(0.077)
State interventionism	Size of public sector (t-1)	0.637***	0.637***	0.644***	0.666***	0.649***	0.721***	0.648***
		(0.135)	(0.150)	(0.158)	(0.144)	(0.134)	(0.167)	(0.139)
State fiscal situation	Relative budget surplus/deficit (t-1)	0.078*	0.096*	0.103**	0.078*	0.073*	0.109**	0.102*
		(0.034)	(0.039)	(0.038)	(0.034)	(0.036)	(0.038)	(0.047)
Implementation resource	Density of radiologists (t-1)	40.40*	50.27*	50.07*	41.51*	41.44*	54.74**	54.40**
		(17.74)	(19.90)	(20.61)	(16.43)	(17.81)	(18.44)	(16.91)
Controls	t	-0.221	-0.420	-0.409	-2.623	-0.190	-3.150	-0.474
		(0.691)	(0.676)	(0.682)	(1.862)	(0.708)	(1.928)	(0.688)
	t^2	-0.015	0.000	0.002	0.175	-0.016	0.218	0.012
		(0.076)	(0.077)	(0.077)	(0.164)	(0.077)	(0.168)	(0.075)
	t^3	0.001	0.001	0.001	-0.003	0.001	-0.005	0.000
		(0.002)	(0.002)	(0.002)	(0.004)	(0.002)	(0.004)	(0.002)
	Constant	-12.34***	-11.20***	-11.29***	-11.96***	-12.61***	-11.41***	-10.72***
		(2.807)	(2.536)	(2.549)	(2.568)	(2.842)	(2.436)	(2.237)
	N	448	448	448	448	448	448	448
	Years	21	21	21	21	21	21	21
	Wald Chi^2	75.25***	125.1***	101.4***	59.96***	86.61***	100.1***	92.85***
	McFadden's R^2	0.240	0.274	0.277	0.292	0.244	0.340	0.269
	AIC	106.0	104.2	103.9	102.2	107.6	101.0	98.84

Legend: Robust standard errors in parentheses, clustered by canton: # p < 0.1, * *p* < 0.05, ** *p* < 0.01, *** *p* < 0.001.

7.4 Restaurant Food Nutrition Labelling

Model specification

Table 40 on the next page lists the independent variables that will be accounted for in the models on the adoption of restaurant food nutrition labelling. Their selection is based mainly on the portrayal of the policy in Chapter 5.5.[191] The policy design of restaurant food nutrition labelling is complex and labelling is associated with sizable implementation costs. Against this background, the cantons are expected to be reluctant to decide about such labels independently of the behaviour of other cantons. Regional diffusion is thus likely to shape innovation decisions. Given the challenges of defining the details of labelling, cantonal decision makers are expected to attach more weight to the actual implementation than to the mere adoption of healthy nutrition labels by other cantons. Hence, the implementation-based regional diffusion variable should perform better than the adoption-based one. Presumably, point-source diffusion also plays a part in cantonal policy adoptions. The effects of the establishment of the national FV association, which offers technical expertise and funding, and the provision of funding by Health Promotion Switzerland are modelled, both of which are expected to be positive.

As regards the internal determinants studied, the prevalence of overweight is used as a measure of the scope of the relevant public health problem. The likelihood of policy adoption might also correspond to the pervasiveness of out-of-home eating. After all, the policy primarily targets this aspect of nutrition. Time-series data on out-of-home eating, disaggregated by canton, do not exist. The models therefore contain a variable that reflects one of the drivers of out-of-home eating, i.e. the expansion of the day-care sector for children (measured in terms of employment in that sector; see Chapter 6.2).[192]

Government ideological preferences are specified in terms of the party affiliation of health ministers. As described in Chapter 5.5, the creation of both labels was initiated by cantonal administrations, either the health department of the pioneering canton or units subordinate to it. If healthy nutrition labels are incorporated into cantonal action programmes, the health department is also in charge of selecting the policy measures that make up the programme. Health departments are thus deemed to be the most relevant governmental institution in innovation decisions on this policy.

In view of the complex policy design, policy adoption is expected to be the more likely to occur, the more extensive cantonal resources for policy analysis and formulation are. Labelling is associated with sizable costs. Thus, state fiscal situation and degree of state interventionism are likely to matter, with positive estimated coefficients being expected on the relevant variables.

[191] Boehmke (2009) provides the only diffusion study in the area of healthy nutrition. It focuses on U.S. state adoptions of various components of obesity legislation (including labelling). Since he uses obesity-related policies merely as an illustration of a more general issue (i.e. modelling the adoption of policies that entail multiple components), he does not elaborate on the state characteristics that might explain policy adoption (Boehmke 2009: 239-240). Besides variables that are common to many diffusion studies (government ideology, legislative professionalism, neighbour-based diffusion), he controls for the prevalence of overweight as well as state population and per capita income, with the latter two serving as proxy measures of the propensity to innovate.

[192] The size of the day-care sector for children is a reasonable proxy measure of the demand for s&d. With FV covering the entire spectrum of out-of-home eating, the variable is only a partial indicator of the concept of interest. Other variables, which cover employment in the restaurant sector or in the care industry, were also tested. Their effects were not significant, either.

Table 40: Restaurant food nutrition labelling: explanatory factors

Type of explanatory factor	*Variable and operational definition*	*Expected impact*
Regional diffusion	Regional diffusion 1: Proportion of previous adopters in CMPH-region (t-1)	Positive
	Regional diffusion 2: Proportion of previous implementers in CMPH-region (t-1)	Positive
Point-source diffusion	Financial incentives: Funding of cantonal action programmes by Health Promotion Switzerland	Positive
	Technical assistance: Provision by FV-CH/Radix	Positive
Problem severity	Prevalence of overweight: Percentage of individuals with BMI > 25 (t-1)	Positive
Ideological preferences	Left-party affiliation of health minister: Dummy for left-party affiliation	Positive
Interest group pressures	Strength of public health organisations: Employees of public health organisations per 1000 employees (t-1)	Positive
Policy-making capacity	Density of administration: Employees of cantonal administration per 1000 employees (t-1)	Positive
State interventionism	Size of public sector: Government-spending-to-GDP ratio (in %) (t-1)	(Positive)
State fiscal situation	Relative budget surplus/deficit: Surplus/deficit as percentage of government spending (t-1)	(Positive)
Relevance of policy	Day-care sector for children: Employees in childcare facilities per 1000 employees (t-1)	Positive

Results

In line with the procedure in previous subchapters, Table 42 on the following page presents a set of logit models on cantonal adoptions of restaurant food nutrition labelling that range from an internal-determinants model (4a) to a model that focuses on predictors that reach statistical significance at least at the 0.10 level (4f). Beforehand, Table 41 reports the descriptive statistics of the variables used.

Table 41: Restaurant food nutrition labelling: descriptive statistics of variables, 1993-2013

	Mean	Standard deviation	Min.	Max.	Obs.
Policy adoption	0.044	0.205	0	1	410
Regional diffusion 1 (adopters) (t-1)	0.098	0.177	0	0.857	410
Regional diffusion 2 (implementers) (t-1)	0.055	0.128	0	0.714	410
Financial incentives (funding of cantonal action programmes by Health Promotion Switzerland)	0.232	0.422	0	1	410
Technical assistance (provided by FV-CH/Radix)	0.583	0.494	0	1	410
Prevalence of overweight (t-1)	37.2	3.7	26.1	46.8	410
Left-party affiliation of health minister	0.405	0.491	0	1	410
Strength of public health organisations (t-1)	0.2	0.2	0	1.3	410
Density of administration (t-1)	16.1	8.6	7.6	58.2	410
Size of public sector (t-1)	14.3	2.8	8.5	26.8	410
Relative budget surplus/deficit (t-1)	0.0	5.1	-26	19	410
Day-care sector for children (t-1)	1.3	1.1	0	6.4	410

Table 42: Logit models on the adoption of restaurant food nutrition labelling, 1993-2013

		(4a) Internal deter-minants	(4b) Plus regional diffusion 1	(4c) Plus regional diffusion 2	(4d) Plus financial incentives	(4e) Plus technical assistance	(4f) Complete model	(4g) Reduced model
Regional diffusion	Regional diffusion 1 (adopters) (t-1)		5.822***					
			(1.163)					
	Regional diffusion 2 (implementers) (t-1)			7.265***			8.066***	6.514***
				(1.347)			(1.330)	(0.997)
Point-source diffusion	Financial incentives (funding by Health Promotion Switzerland)				1.676		3.483*	2.662#
					(1.279)		(1.353)	(1.408)
	Technical assistance (provided by FV-CH/Radix)					1.181	1.064	
						(1.491)	(1.143)	
Problem severity	Prevalence of overweight (t-1)	-0.073	-0.291**	-0.292*	-0.055	-0.081	-0.257*	
		(0.101)	(0.106)	(0.128)	(0.104)	(0.105)	(0.124)	
Ideological preferences	Left-party affiliation of health minister	1.043#	0.743	0.531	0.949	1.085#	0.422	
		(0.565)	(0.544)	(0.566)	(0.603)	(0.582)	(0.608)	
Interest group pressures	Strength of public health organisations (t-1)	1.271	1.321	1.295	1.404	1.268	1.663#	
		(0.960)	(0.997)	(0.986)	(0.960)	(0.958)	(0.980)	
Policy-making capacity	Density of administration (t-1)	0.012	0.029	0.035	0.017	0.013	0.045	
		(0.035)	(0.040)	(0.040)	(0.036)	(0.035)	(0.043)	
State fiscal situation	Relative budget surplus/deficit (t-1)	0.060*	0.013	0.014	0.026	0.064**	-0.054	
		(0.024)	(0.031)	(0.031)	(0.034)	(0.025)	(0.041)	
State interventionism	Size of public sector (t-1)	0.316*	0.242#	0.213	0.302*	0.316*	0.171	
		(0.143)	(0.143)	(0.144)	(0.148)	(0.137)	(0.156)	
Policy relevance	Day-care sector for children (t-1)	0.403	-0.366	-0.380	0.372	0.391	-0.511#	
		(0.255)	(0.279)	(0.282)	(0.255)	(0.255)	(0.279)	
Controls	t	-0.265	-0.243	-0.257	-0.005	-0.400	0.095	-0.217
		(0.398)	(0.398)	(0.400)	(0.413)	(0.450)	(0.493)	(0.491)
	t^2	0.032	0.050	0.042	-0.004	0.032	-0.027	0.012
		(0.043)	(0.045)	(0.045)	(0.044)	(0.044)	(0.050)	(0.057)
	t^3	-0.001	-0.002	-0.001	0.000	-0.000	0.001	-0.000
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)
	Constant	-7.098*	1.210	1.733	-7.881*	-6.667#	0.633	-3.735***
		(3.399)	(3.416)	(4.125)	(3.434)	(3.488)	(3.979)	(1.092)
	N	410	410	410	410	410	410	410
	Years	21	21	21	21	21	21	21
	Wald Chi^2	52.10	111.8	181.0	48.76	58.61	169.8	133.3
	McFadden's R^2	0.169***	0.270***	0.283***	0.179***	0.173***	0.312***	0.240***
	AIC	144.8	131.8	129.9	145.3	146.2	129.6	124.2

Legend: Robust standard errors in parentheses, clustered by canton: # p < 0.1, * *p* < 0.05, ** *p* < 0.01, *** *p* < 0.001.

According to the internal determinants models, three variables shape cantonal innovation decisions – party affiliation of cantonal health minister, fiscal situation and state interventionism. Problem severity, government ideological preferences, interest group pressures, policy-making capacity and policy relevance do not exhibit significant effects on the likelihood of policy adoption. In comparing models 4b to 4f, it becomes apparent that the effects of the internal determinants accounted for are not robust. What is more, if clearly insignificant predictors are removed, none of the remaining internal determinants reaches statistical significance. Overall, the internal determinants studied provide little leverage for explaining cantonal policy adoptions. That is why model 4f includes diffusion variables only.

In contrast, cantonal adoptions turn out to be clearly influenced by interdependent decision-making within CMPH-regions. Regardless of model specification, the estimated coefficients on regional diffusion are consistently positive and highly significant. As expected, the percentage of previous implementers exhibits a somewhat stronger effect than the adoption-based diffusion variable.

When entered on its own, the variable that captures the provision of funding by Health Promotion Switzerland for cantonal action programmes yields a positive coefficient, but is not quite statistically significant (p=0.10). Yet, in models that test for the effects of regional diffusion and the provision of funding at the same time, the point-source diffusion variable proves to be statistically significant at the 0.05 level (model 4f) or the 0.10 level (model 4g). Thus, the funding provided by Health Promotion Switzerland for cantonal action programmes seems to further cantonal adoptions of restaurant food nutrition labelling. The coefficient on the variable, which records the establishment of *Fourchette verte Suisse* and thus reflects the availability of technical assistance, later also by Radix, as well as early funding by Health Promotion Switzerland (see footnote 154), is also positive, but does not reach significance in either of the models.

In sum, the adoption of restaurant food nutrition labelling appears to be entirely driven by diffusion effects. Based on the reduced model, we find that a shift from the minimum to the maximum value of the regional diffusion variable, with funding for cantonal action programmes by Health Promotion Switzerland being set as available, increased the likelihood of policy adoption in 2007 by 54.7 percent (CI: 26.9, 82.5). For the same year, the provision of funding for cantonal action programmes increased the likelihood of policy adoption by 13.6 percent (CI: -11.7, 39.0), with regional diffusion being fixed at the mean.

7.5 Summary: The Determinants of Four Cantonal Public Health Policies

The four public health policies analysed in Chapters 7.1 to 7.4 diverge greatly in terms of the types of explanatory factors that are found to drive cantonal adoptions: Internal determinants shape adoptions of the ban on tobacco billboard advertising, with diffusion effects failing to have a significant impact. The opposite holds for restaurant food nutrition labelling: Instead of internal determinants, diffusion effects explain policy adoption. Adoptions of breast cancer screening programmes, in turn, are a function of both internal determinants and diffusion effects. In contrast, variables from neither category contribute to the explanation of cantonal adoptions of the ban on tobacco sales to children and adolescents.

These differences in patterns of policy innovation and diffusion are striking. Without increasing the number of policies studied and extending the sample to areas of Swiss public health policy-making not covered at present, it is impossible to generalise the findings to the policy field. Yet, they serve to highlight the overall research question that guides this study: What difference do the characteristics of innovative policies make? Regarding the diverging patterns among the four policies, to what extent are they accounted for by differences in policy attributes? The following chapter seeks to shed light on this question, using the findings from this chapter also as the basis for the specification of models that are to disentangle the impact of policy characteristics.

8 Disentangling the Effects of Policy Characteristics on Innovation and Diffusion

This chapter aims at disentangling the impact of the policy design characteristics of interest: Depending on the specific combination of characteristics, are some policies more adoptable than others? Do design characteristics affect the importance of individual internal determinants for the adoption of innovative policies? Finally, do they condition the weight of diffusion effects, more precisely of interdependent decision making among peer governments, in innovation choices? To answer these questions, Chapter 8 tests – as far as the actual sample of policies permits – the hypotheses formulated in Chapter 3.2. The analysis rests on two approaches: the estimation of "***standardised single event models***" and of ***multiple events models***.

Standardised single event models, as defined here, analyse the adoptions of different policies separately. They use the same set of predictors across models, though. In that sense, these models are "standardised". This approach allows comparing the impact of specific internal determinants and diffusion effects on adoption across policies as a means of uncovering if differences in policy designs manifest in differential effects. In situations where heterogeneous processes undergird the adoptions of the policies studied, such standardised models offer an alternative to pooling policies into the same model (cf. page 103). Separate models have one drawback, though: Without pooling policies into one model, it is impossible to model the direct effects of policy characteristics (see page 101). As a result, standardised single event models are suitable for testing the ***Policy Characteristics and Internal Determinants Hypothesis*** (H 2.0) and the ***Policy Characteristics and Diffusion Effects Hypothesis*** (H 3.0), but cannot provide an insight into whether the ***Policy Characteristics and Adoption Hypothesis*** (H 1.0) holds.

In the present context, the comparison of results across policies suffers from another limitation: As described before (cf. footnote 184), the small number of cantonal adoptions of the two alcohol sales restrictions in the sample makes the estimation of single event models on these policies impossible. Hence, Chapter 8.2 must confine itself to the same four policies that were analysed Chapter 7. Nevertheless, the results of the standardised single event models will be presented – as one part of the overall analysis and as a useful preparatory step for the multiple event models estimated in Chapter 8.3.

Models that pool policies with different characteristics and trace their adoptions over time allow for testing for the expected direct effects of policy characteristics – through the inclusion of variables that capture such characteristics. What is more, the resultant ***multiple events models*** also permit testing if the effects of internal determinants and diffusion on adoption vary by policy attributes. Interaction terms of policy attributes and the explanatory factors of interest serve this purpose. Hence, multiple events models are a versatile framework for assessing what difference policy characteristics make. They allow for testing hypotheses H 1.0, H 2.0 and H 3.0 alike.

Because of limitations in sample size and composition, this study cannot test all sub-hypotheses of interest, though. It must limit itself to testing a subsection of the hypotheses raised in Chapter 3.2. Against this background, Chapter 8.1 describes the empirical constraints that the study faces. Chapter 8.2 presents the results of the standardised single event models and Chapter 8.3 does so for the multiple events models estimated. Chapter 8.4 summarises the insights gained from these analyses.

8.1 Empirical Constraints to Hypothesis Testing

A comprehensive test of the hypotheses formulated in Chapter 3.2 requires a sample that covers each of the policy design characteristics of theoretical interest as well as different combinations of values of these characteristics through a sufficient number of policies.

Due to difficulties in selecting suitable policies (cf. page 60), the sample used in this study does not meet this requirement. The number of policies selected is too small and their designs are too similar (for an overview, see Table 43 below). Thus, among the six policies sampled, degree of intervention, complexity and implementation costs turn out to be collinear: Four policies score high on degree of intervention and low on complexity and implementation costs. The remaining policies typify the reverse combination of values, i.e. a low degree of intervention and high levels of complexity and costs. The sample does not include other combinations of values of these policy characteristics variables. This empirical set-up restricts the potential for disentangling the effects of the three policy attributes concerned. Regarding designated beneficiaries, the sample is more conducive to testing the hypothesis of interest as the actual values of this variable are not collinear with the other characteristics studied (cf. Table 43).

Table 43: Summary of design characteristics of the policies studied

Policy	*Designated beneficiaries*	*Degree of intervention*	*Complexity*	*Implementation costs*
Ban on tobacco billboard advertising	Other	High	Low	Invisible
Ban on tobacco sales to minors	Children/ adolescents	High	Low	Invisible
Ban on alcohol sales at petrol stations	Other	High	Low	Invisible
Ban on take-out alcohol sales at night	Other	High	Low	Invisible
Breast cancer screening programmes	Other	Low	High	High
Restaurant food nutrition labelling	Other; children/ adolescents[193]	Low	High	High

These constraints in sample size and composition have several implications. First, the study must forego testing several of the sub-hypotheses of interest. More specifically, it adopts the following approach to hypothesis testing (which Table 44 on the following page sums up):

- ***Policy Characteristics and Adoption Hypothesis****:* The study limits itself to testing H 1.1, with H 1.2, H 1.3 and H 1.4 – due to multicollinearity among the policy characteristics at stake – being left aside.
- ***Policy Characteristics and Internal Determinants Hypothesis****:* It tests H 2.1, H 2.2 and H 2.3. Strictly speaking, with the policy characteristics concerned being collinear, the design of the study cannot rule out that another characteristic than the one that the particular hypothesis centres on causes an observed effect. Yet, thanks to the clear theoretical expectations on the links between policy characteristics and specific internal determinants or diffusion effects, it seems justified to attribute a particular empirical pattern, if observed, to the impact of a particular policy attribute.
- ***Policy Characteristics and Diffusion Effects Hypothesis****:* While the sample does not allow for individual tests of H 3.1 and H 3.2, the hypotheses are amenable to a joint test of statistical significance.

[193] Cantons that introduced restaurant food nutrition labelling between 2007 and 2013 target children and adolescents exclusively, adopting either s&d or exclusively those FV-sublabels directed at that age group. As these later adopters effectively re-defined the designated beneficiaries of the policy, the latter is coded as "children/adolescents" from 2007 onwards.

Table 44: Approach to hypothesis testing

Hypothesis	Sub-hypothesis	Tested?
Policy Characteristics and Adoption Hypothesis	H 1.1: designated beneficiaries and the likelihood of policy adoption	yes
	H 1.2: degree of intervention and the likelihood of policy adoption	no
	H 1.3: complexity and the likelihood of policy adoption	no
	H 1.4: implementation costs and the likelihood of policy adoption	no
Policy Characteristics and Internal Determinants Hypothesis	H 2.1: degree of intervention and the impact of ideological preferences on the likelihood of policy adoption	yes
	H 2.2: complexity and the impact of state policy-making capacity on the likelihood of policy adoption	yes
	H 2.3: implementation costs and the impact of state fiscal situation on the likelihood of policy adoption	yes
Policy Characteristics and Diffusion Effects Hypothesis	H 3.1: implementation costs and the impact of peer effects on the likelihood of policy adoption	yes, joint test
	H 3.2: complexity and the impact of peer effects on the likelihood of policy adoption	

Secondly, because of the small sample size, the research design cannot entirely rule out that unobserved idiosyncrasies of the policies studied (rather than the characteristics of interest) produce an observed effect. This weakens the causal inference on the sub-hypotheses tested. The multiple events models estimated in Chapter 8.3 will account for such idiosyncrasies as far as possible through policy fixed effects, though.

Third, the small number of policies sampled compromises the statistical power of tests. In other words, the sample size may impede the detection of existing effects.

8.2 Standardised Single Event Models: Evidence on the Indirect Effects of Policy Characteristics

Testing logic and model specifications

This section subjects the sub-hypotheses of the ***Policy Characteristics and Internal Determinants Hypothesis*** and the ***Policy Characteristics and Diffusion Effects Hypothesis*** to a first empirical test. When looking at the same subsample of policies as in Chapter 7 and taking the actual distribution of policy design characteristics as summarised in Table 43 into account, we expect the standardised single event models estimated to lead to the following observations – provided that hypotheses H 2.1 to H 2.3 and H 3.1 and H 3.2 combined hold:

- Ideological preferences more strongly affect the likelihoods of cantonal adoption of the bans on tobacco billboard advertising and on tobacco sales to minors than of breast cancer screening programmes and restaurant food nutrition labelling.
- Cantonal policy-making capacity more strongly shapes the likelihoods of adoption of breast cancer screening programmes and restaurant food nutrition labelling than of the bans on tobacco billboard advertising and tobacco sales to minors.

- The fiscal situation of the canton influences the whether and when of adopting a breast cancer screening programme and restaurant food nutrition labelling, but does not affect adoptions of the bans on tobacco billboard advertising and on tobacco sales to minors.
- Peer effects hold more weight over adoptions of breast cancer screening programmes and restaurant food nutrition labelling than over adoptions of the bans on tobacco billboard advertising and on tobacco sales to minors.

Standardised single event models serve to contrast these expectations with the actual empirical patterns for the four public health policies. The models, which are presented in Table 58 in the Appendix, follow the specifications used in Chapter 7 – with the difference that they use a common set of explanatory variables across policies. This set assembles the predictors that figure in the "reduced models" on the four policies in Chapter 7.[194]

Given that the coefficients of individual models cannot directly be compared, ***average marginal effects (AME)***[195], i.e. marginal effects averaged across all observations that form the estimation sample of the specific model, are computed (see Table 45 on the following page).

Results

Table 45 displays the results. For several key explanatory factors, the findings do not follow the expected pattern or at least fail to do so unequivocally:

- The estimated AME of left-party strength for the two highly-interventionist policies (models 5a and 5b) exceed those for the policies that involve a low degree of intervention (models 5c and 5d) and are in line with H 2.1. However, the AME in model 5a is statistically insignificant.
- The estimated AME of state policy-making capacity diverge from what H 2.2 predicts: Model 5a, which reflects cantonal adoptions of a simple policy, shows a larger effect than models 5c and 5d, which cover cantonal adoptions of complex policies.[196]
- As expected, the AME of state fiscal situation in model 5c on a high-cost policy is positive and statistically significant and the AME in model 5b on a low-cost policy is statistically insignificant. However, the statistically insignificant effect in model 5d (policy with sizable implementation costs) and the statistically significant effect in model 5a (low-cost policy) do not conform to H 2.3.

However, one finding clearly is in line with the hypotheses specified: The AME of the regional diffusion variable in models 5c and 5d clearly outperform those in models 5a and 5b, where they are not even statistically significant. Put differently, the effects of interdependent decision making among peer governments shape cantonal innovation decisions on those policies in the sample that are costly and complex, but not on those policies that entail low levels of complexity and implementation costs.

In sum, the results lend initial support to H 3.1 and H 3.2 combined, but neither to H 2.1, H 2.2 nor to H 2.3.

[194] To render the models more comparable, the operational definitions of a few variables were slightly changed. The model on the adoption of breast cancer screening programmes now includes the number of radiologists per 1000 employees (instead of the density of radiologists). The two variables are almost identical (r=0.94, N=410). Furthermore, employment in the restaurant sector (rather than in the day-care sector for children) is used in model 6d as a measure of producer pressures.

[195] In the present context, a marginal effect reflects the instantaneous change in the predicted probability of policy adoption that is associated with an infinitesimal change in the predictor of interest (i.e. a specific internal determinant or diffusion effect), with the remaining predictors held constant (cf. Steenbergen 2010: 35).

[196] What is more, the instantaneous change in the probability that cantons adopt organised breast cancer screenings for an infinitesimal change in policy-making capacity is statistically significant and *negative* (model 5c). While strictly speaking not running counter to H 2.2, this is counterintuitive.

Table 45: Average marginal effects on the adoptions of four public health policies

		(5a) Ban on tobacco billboard advertising	(5b) Ban on tobacco sales to minors	(5c) Breast cancer screening programmes	(5d) Restaurant food nutrition labelling
Regional diffusion	Regional diffusion 2 (implementers) (t-1)	-0.064 (0.073)	-0.151 (0.335)	0.068** (0.020)	0.225*** (0.047)
Point-source diffusion	Financial incentives	-	-	0.171* (0.072)	0.158 (0.124)
Ideological preferences	Strength of left parties in parliament	0.176 (0.111)	0.720# (0.418)	-0.055 (0.079)	-0.065 (0.126)
Interest group pressures	Strength of public health organisations (t-1)	0.303*** (0.032)	0.131 (0.147)	0.022 (0.026)	0.063# (0.033)
Policy-making capacity	Density of adminis-tration (t-1)	0.007*** (0.001)	-0.010 (0.008)	-0.003* (0.001)	0.001 (0.002)
State interventionism	Size of public sector (t-1)	0.001 (0.002)	0.006 (0.014)	0.014*** (0.003)	0.007 (0.005)
State fiscal situation	Relative budget surplus/deficit (t-1)	-0.005** (0.002)	-0.000 (0.007)	0.003** (0.001)	-0.001 (0.002)
Producer pressures	Tobacco production (t-1)	-0.224*** (0.032)	-0.018# (0.010)	-	-
	Radiology industry (t-1)	-	-	0.857** (0.274)	-
	Restaurant sector (t-1)	-	-	-	-0.002 (0.002)

Legend: Robust standard errors in parentheses, clustered by canton; # p < 0.1, * *p* < 0.05, ** *p* < 0.01, *** *p* < 0.001.

8.3 Multiple Events Models: Evidence on the Direct and Indirect Effects of Policy Characteristics

Testing logic and model specification

Drawing on the complete sample of six policies, the multiple events models to be estimated serve to subject the ***Policy Characteristics and Adoption Hypothesis***, the ***Policy Characteristics and Internal Determinants Hypothesis*** and the ***Policy Characteristics and Diffusion Effects Hypothesis*** a more comprehensive test than the preceding subchapter did.

Table 46 on the next page extracts the key explanatory factors from the sub-hypotheses to be tested (cf. Chapter 8.1), translates the contingent effects hypothesised in H 2.1, 2.2, 2.3 as well as H 3.1 and 3.2 combined into interaction terms, recapitulates operational definitions and shows the expected direction of effects. Note that – due to the issue of multicollinearity discussed in Chapter 8.1 – the models cannot include separate variables on degree of intervention, complexity and implementation costs. Instead, "policy type", which combines these three characteristics into one variable, is used.

Table 46: Multiple events models: key explanatory factors

Category	*Type of explanatory factor*	*Variable and operational definition*	*Expected impact*
Policy characteristics	Designated beneficiaries	Dummy = 1 for children's health policy	*H 1.1*: Positive
	Degree of intervention, complexity, implementation costs	Policy type: Dummy = 1 for hardly-interventionist, complex, high-cost policy	-
Internal determinants	Ideological preferences	Strength of left parties in parliament: Proportion of left-party seats in cantonal parliament	Positive
	Policy-making capacity	Density of administration: Employees of cantonal administration per 1000 employees (t-1)	Positive
	State fiscal situation	Relative budget surplus/deficit: Surplus/deficit as percentage of government spending (t-1)	(Positive)
Diffusion effects	Peer effects	Regional diffusion 2: Proportion of previous implementers in CMPH-region (t-1)	Positive
Policy characteristics * internal determinants	Degree of intervention * ideological preferences	Policy type * strength of left parties in parliament	*H 2.1*: Negative[197]
	Complexity * policy-making capacity	Policy type * density of administration	*H 2.2*: Positive
	Implementation costs * state fiscal situation	Policy type * relative budget surplus/deficit	*H 2.3*: Positive
Policy characteristics * diffusion effects	Complexity and implementation costs * peer effects	Policy type * regional diffusion 2	*H 3.1+3.2*: Positive

Apart from these key explanatory variables, the models will control for other potential predictors of policy adoption, including other internal determinants (i.e. interest group pressures, state interventionism, producer pressures, problem severity)[198] and point-source diffusion influences (i.e. financial incentives, technical assistance, signal about appropriate course of action).[199]

As mentioned before, the adoptions of different policies might be driven by quite ***heterogeneous processes.*** Therefore, the following questions need to be answered in specifying multiple events models that pool different policies into one equation (cf. Boehmke 2009: 234-236):

- Should the ***coefficients*** on explanatory variables be restricted to be constant across event types (here, adoptions of different policies) or allowed to vary?
- Moreover, should the ***baseline hazard rates*** be fixed or allowed to vary by event type, by event number or by both?

Regarding the estimation of coefficients, this study adopts a middle course. If the standardised single event models estimated in Table 58 in the Appendix show a predictor to have a significant positive effect on the adoption of at least one, but a significant negative effect on the adoption of at least another policy, the models estimated below will allow coefficient estimates to vary. For that purpose,

[197] Because of the way that the variable "policy type" is coded.

[198] For operational definitions of these variables, see Table 30.

[199] For operational definitions of these variables, see Table 8. The effects of "concrete prospect of federal legislation" cannot be estimated because the variable leads to quasi-separation.

they will provide for a variable that interacts the predictor concerned with a dummy for the policy that produces the divergent pattern. It will do so whenever the interaction terms listed in Table 46 do not already allow for differential effects. In all other instances, the coefficients will be restricted to be constant across policies.

As the baseline hazard rate is concerned, ***policy fixed effects*** (i.e. a dummy variable for each policy analysed) are used. ***Stratification by policy*** is necessary. For the analyses in Chapter 7 showed the policies to exhibit highly different patterns of adoption and the explanatory variables used will not fully account for these differences. In contrast, stratification of the sample by order of policy adoption, i.e. estimating different baseline hazards for the first policy that a government adopts, the second one and so on, does not seem warranted on substantive grounds.[200]

Table 47 describes the statistical distribution of variables that feature in the multiple events models presented in the next section.

Table 47: Multiple events models: descriptive statistics of variables

	Mean	Standard deviation	Min.	Max.	Obs.
Policy adoption	0.039	0.193	0	1	1856
Designated beneficiaries	0.118	0.323	0	1	1856
Policy type	0.462	0.499	0	1	1856
Strength of left parties in parliament	0.246	0.130	0	0.531	1856
Strength of public health organisations (t-1)	0.3	0.3	0	3.3	1856
Density of administration (t-1)	17.1	8.9	7.6	58.2	1856
Size of public sector (t-1)	14.9	3.1	8.5	26.8	1856
Relative budget surplus/deficit (t-1)	0.0	5.3	-26	19	1856
Producer pressures (t-1)	8.8	13.7	0	59.4	1856
Regional diffusion 2 (implementers) (t-1)	0.101	0.188	0	1	1856
Financial incentives	0.199	0.399	0	1	1856
Technical assistance	0.173	0.378	0	1	1856
Signal about appropriate course of action	0.140	0.347	0	1	1856
Policy type * strength of left parties in parliament	0.110	0.147	0	0.531	1856
Policy type * density of administration	7.7	10.3	0	58.2	1856
Policy type * relative budget surplus/deficit	-0.0	3.5	-26	19	1856
Policy type * regional diffusion 2	0.032	0.109	0	1	1856
Ban on tobacco outdoor advertising (P1) dummy	0.141	0.348	0	1	1856
Ban on tobacco sales to children (P2) dummy	0.067	0.250	0	1	1856
Ban on alcohol sales at petrol stations (P3) dummy	0.135	0.342	0	1	1856
Ban on take-away alcohol sales at night (P4) dummy	0.195	0.396	0	1	1856
Breast cancer screening programmes (P5) dummy	0.241	0.428	0	1	1856
Restaurant food nutrition labelling (P6) dummy	0.221	0.415	0	1	1856

Results

Table 48 on page 140 presents the results of seven multiple events models. Model 5a contains the entire set of internal determinants and diffusion effects. Model 5b adds the policy dummies, with the

[200] It might be appropriate in a situation where the analysis is based on an exhaustive list of policies from the same issue area.

ban on tobacco billboard advertising serving as the reference category. Moreover, it interacts the policy dummy for breast cancer screening programmes with the predictor "producer pressures" as Table 56 in the Appendix attests to the differential effect of that predictor on the adoption of the policies studied. Model 5c adds the policy characteristic variables – designated beneficiaries and policy type – to this set-up. Note that, due to multicollinearity, one policy dummy drops out of this and later models. Model 5d complements the analysis with the interaction of policy type and ideological preferences, while models 5e, 5f and 5g do so for the interactions of policy type and policy-making capacity, state fiscal situation and regional diffusion, respectively.

In turning to the results, let us first look at ***H 1.1***, according to which innovative policies that target children for benefits are more likely to be adopted than other policies. In line with what H 1.1 predicts, the estimated coefficient of designated beneficiaries has a positive sign in models 5c to 5g. In most models, it does not reach statistical significance, though. Only Model 5g shows a significant effect for "designated beneficiaries". According to the Akaike Information Criterion (AIC) displayed in the lower part of the table, model 5g fits the data best. Yet, due to the suppression of one policy dummy, 5g does not fully control for (unobserved) heterogeneity among the policies studied. Against this background, the model does not allow for unambiguous inferences on the effects of designated beneficiaries. For the time being, we do not know if children's health policies are more likely to be adopted than policies that target other age groups or the population as a whole.

To assess if degree of intervention conditions the weight of ideological preferences in policy innovation decisions (***H 2.1***) we turn to model 5d. As expected, the interaction term is negative (see Table 46). However, it is clearly insignificant. Hence, we cannot rule out with sufficient certainty that the effects of left-party representation in cantonal parliaments are the same, regardless of the degree to which the policy intervenes into the private or professional sphere of the direct target group. Regarding the main effect of left-party strength, Table 48 does not convey a clear picture as to whether such parties advance policy innovation. The estimated coefficients are consistently positive, but statistically insignificant in several models, including 5g.

Model 5e sheds light on **H 2.2**, which revolves around the difference that the complexity of innovative policies might make for the impact of state policy-making capacity on the likelihood of adoption. The main effect of policy-making capacity turns out to be statistically insignificant in all models, suggesting that states with sizable policy-making capacities (at least as measured here) are no more likely to innovate than their counterparts with fewer resources. With the relevant interaction term also failing to reach statistical significance, this finding holds for both simple and complex policies.

What about a contingent effect of state fiscal situation then? According to model 5f, which shows the relevant interaction to be statistically insignificant, implementation costs do not shape the importance of this predictor for policy innovation – contrary to what ***H 2.3*** predicts. Rather, as the main effect is also insignificant, state fiscal situation appears to have no impact on the likelihood of policy adoption whatsoever.

In contrast, Table 48 indicates a contingent effect for regional diffusion. According to models 5a to 5f, governments are the more likely to innovate the higher the share of adopters of the same policy within the respective regional conference of cantonal health ministers ("peers") is. Once important features of the policy design are controlled for, this finding has to be qualified: Model 5g shows that the positive effect of previous policy adoptions by peers does not apply universally, but is limited to complex and costly policies.[201]

[201] Given that the dropping out of the dummy variable for Policy 6 in the course of the transition from model 5b to 5c has no noticeable impact on the estimated coefficient of regional diffusion and that its significance changes only once the interaction between regional diffusion and policy characteristics is included in model 5g, it is highly

In other words, policy makers seem to pay attention to peers' previous policy choices when the innovations at stake require a substantial investment of resources, but not otherwise. Hence, in the case of relatively simple and low-cost policies, innovation decisions appear to be driven first and foremost by internal determinants.

In all, the results from the multiple events models support H 3.1 and H 3.2 combined. They are insufficient for assessing H 1.1, while backing neither H 2.1, H 2.2 nor H 2.3.

unlikely that the omission of the fixed effect for Policy 6 confounds the observed differential effect of interdependent decision making among peers.

Table 48: Pooled logit models on the adoption of six public health policies

		(5a) Baseline	(5b) Plus policy fixed effects	(5c) Plus policy characteristics	(5d) Plus policy type * ideological preferences	(5e) Plus policy type * policy-making capacity	(5f) Plus policy type * state fiscal situation	(5g) Plus policy type * regional diffusion
Designated beneficiaries	Children's health policy	-	-	1.380	1.401	1.314	1.385	2.345*
				(0.952)	(0.955)	(1.003)	(0.958)	(1.097)
Policy type	Hardly-interventionist, complex, high-cost policy	-	-	3.310*	4.172**	3.104*	3.429*	2.615#
				(1.426)	(1.598)	(1.481)	(1.420)	(1.473)
Regional diffusion	Regional diffusion 2 (% implementers) (t-1)	1.469#	1.771*	1.837*	1.929*	1.807*	1.892*	-0.367
		(0.755)	(0.749)	(0.766)	(0.758)	(0.764)	(0.783)	(1.076)
Policy type * regional diffusion		-	-	-	-	-	-	4.366**
								(1.597)
Point-source diffusion	Financial incentives	2.367***	2.788***	1.945*	1.947*	1.979*	1.851*	0.737
		(0.457)	(0.697)	(0.876)	(0.880)	(0.924)	(0.867)	(0.981)
	Technical assistance	1.848**	1.658*	1.746*	1.741*	1.738*	1.642*	0.972
		(0.697)	(0.727)	(0.789)	(0.791)	(0.786)	(0.781)	(0.802)
	Signal about appropriate course of action	1.646***	2.806**	2.701**	2.695**	2.702**	2.683**	2.444**
		(0.455)	(0.885)	(0.880)	(0.886)	(0.881)	(0.879)	(0.837)
Problem severity	Prevalence/mortality	0.047*	-0.009	-0.030	-0.038	-0.026	-0.029	-0.047
		(0.019)	(0.077)	(0.079)	(0.080)	(0.079)	(0.080)	(0.081)
Ideological preferences	Strength of left parties in parliament	1.858	2.287	2.457#	3.164#	2.464#	2.480#	2.183
		(1.344)	(1.404)	(1.416)	(1.826)	(1.414)	(1.416)	(1.387)
Policy type * ideol. preferences		-	-	-	-1.801	-	-	-
					(2.385)			
Interest group pressures	Strength of public health organisations	0.236	0.452	0.491	0.449	0.534	0.499	0.628#
		(0.355)	(0.369)	(0.372)	(0.384)	(0.443)	(0.376)	(0.379)
Policy-making capacity	Density of administration (t-1)	0.015	-0.003	-0.007	-0.006	-0.012	-0.008	-0.005
		(0.019)	(0.021)	(0.023)	(0.023)	(0.034)	(0.023)	(0.023)
Policy type * policy-making capacity		-	-	-	-	0.009	-	-
						(0.037)		
State interventionism	Size of public sector (t-1)	0.056	0.101#	0.100	0.101	0.103	0.102	0.082
		(0.054)	(0.061)	(0.062)	(0.062)	(0.063)	(0.062)	(0.061)

Table 48: Pooled logit models on the adoption of six public health policies (continued)

		(5a) Baseline	(5b) Plus policy fixed effects	(5c) Plus policy characteristics	(5d) Plus policy type * ideological preferences	(5e) Plus policy type * policymaking capacity	(5f) Plus policy type * state fiscal situation	(5g) Plus policy type * regional diffusion
State fiscal situation	Relative budget surplus/deficit (t-1)	-0.034 (0.034)	-0.024 (0.035)	-0.025 (0.035)	-0.026 (0.035)	-0.025 (0.034)	-0.034 (0.047)	-0.019 (0.035)
Policy type * state fiscal situation		-	-	-	-	.	0.030 (0.066)	-
Producer pressures	Sector employment (t-1)	-0.042 (0.027)	-0.088* (0.039)	-0.082* (0.038)	-0.089* (0.040)	-0.082* (0.038)	-0.083* (0.039)	-0.066# (0.037)
Producer pressures * P5			13.13** (4.857)	14.24** (5.321)	15.58** (5.448)	13.43* (5.631)	14.44** (5.367)	13.45* (5.916)
Policy fixed effects	Tobacco sales to children (P2)		-0.632 (0.480)	-1.975# (1.049)	-2.017# (1.053)	-1.892# (1.080)	-1.976# (1.058)	-2.290* (1.133)
	Alcohol sales at night (P3)		-1.271 (1.945)	-1.711 (1.961)	-1.885 (1.979)	-1.619 (1.956)	-1.693 (1.978)	-2.234 (2.001)
	Alcohol sales at petrol stations (P4)		0.457 (1.752)	0.025 (1.756)	-0.147 (1.803)	0.127 (1.825)	0.047 (1.775)	-0.426 (1.780)
	Breast cancer screening programmes (P5)		-1.913 (2.197)	-5.209# (2.924)	-5.851* (2.898)	-5.015# (2.938)	-5.205# (2.928)	-5.153# (3.041)
	Restaurant food nutrition labelling (P6)		3.506* (1.405)	0 (.)	0 (.)	0 (.)	0 (.)	0 (.)
Further controls	t	0.002 (0.165)	-0.052 (0.178)	-0.013 (0.179)	-0.014 (0.180)	-0.012 (0.179)	-0.011 (0.180)	0.163 (0.217)
	t^2	-0.025 (0.021)	-0.031 (0.021)	-0.035 (0.022)	-0.035 (0.022)	-0.035 (0.022)	-0.036 (0.022)	-0.040# (0.024)
	t^3	0.001 (0.001)	0.001# (0.001)	0.001# (0.001)	0.001# (0.001)	0.001# (0.001)	0.001# (0.001)	0.001# (0.001)
	Constant	-6.176*** (0.907)	-5.859** (1.987)	-5.364** (2.006)	-5.377** (2.040)	-5.445** (2.031)	-5.420** (2.040)	-4.912* (2.051)
	N	1856	1856	1856	1856	1856	1856	1856
	Wald Chi^2	120.0	130.1	137.6	160.4	161.5	139.3	157.2
	Mc Fadden's R^2	0.185	0.214	0.217	0.218	0.218	0.218	0.235
	AIC	526.4	520.7	520.7	522.2	522.6	522.3	512.0

Legend: Robust standard errors in parentheses, clustered by canton-years; # p < 0.1, * *p* < 0.05, ** *p* < 0.01, *** *p* < 0.001.

8.4 Evidence on the Effects of Policy Characteristics: Summary and Appraisal

What can we learn from the analyses in Chapters 8.2 and 8.3? Evidently, the limitations in sample size and composition discussed before (see Chapter 8.1) restrict the inferences that can be made. Against this background, it needs to be stressed that the results summarised below are preliminary in nature and that the research questions raised in this study warrant further investigation.

Chapter 8.3 sheds a spot of light on the ***Policy Characteristics and Adoption Hypothesis***. The multiple events models estimated suggest that policies that target children for benefits might be more likely to be adopted than policies that designate other age groups or the population as a whole as beneficiaries, but they cannot substantiate this supposition with sufficient certainty (***H 1.1***). Due to the small sample size, the models cannot fully control for the policy characteristics of interest and other, unobserved differences among the policies studied (through policy fixed effects) at the same time. As a result, the analyses do not provide a conclusive answer as to the effect of the designated beneficiaries of the policy being children and/or adolescents as opposed to other age groups or the population as a whole.

Because of the three remaining policy design characteristics – degree of intervention, complexity and implementation costs – being collinear, Chapter 8.3 refrains from explicitly testing the sub-hypotheses that centre on these characteristics. As a result, the analyses do not reveal whether innovative policies that entail a low-degree of intervention are more likely to be adopted than highly-interventionist ones (***H 1.2***), whether innovative policies that are based on a simple design are more likely to be adopted than those with a complex design (***H 1.3***), and whether innovative policies that involve low or invisible implementation costs are more likely to be adopted than high-cost policies (***H 1.4***).

However, the fact that the coefficient of "policy type", i.e. the dummy variable that is coded 1 for policies that combine a low degree of intervention, a complex policy design and high implementation costs, is consistently positive and statistically significant in the models estimated suggests that these design characteristics matter for the likelihood of innovative policies being adopted. The models do not allow disentangling the individual effects. However, it appears as if an innovation being associated with a high degree of intervention into the privates lives or business activities of the direct target is a more important obstacle to its adoption than a complex policy design or high implementation costs.

Chapters 8.2 and 8.3 subject the three sub-hypotheses of the ***Policy Characteristics and Internal Determinants Hypothesis*** to a first empirical test, the results of which are summarised below:

- At present, we cannot infer that ideological preferences more strongly affect the likelihood of adoption of highly interventionist innovative policies than of policies that entail a low degree of intervention (***H 2.1***), given that the differences observed are statistically insignificant. Yet, the signs of the estimated coefficients are consistently in line with H 2.1. In a larger sample of policies, the differential effects of ideological preferences by degree of intervention might be significant.
- Neither the results of the standardised single event models nor those of the multiple events models back ***H 2.2***: There is no evidence of state policy-making capacity more strongly affecting the likelihood of adoption of complex than of simple innovative policies. However, it should be noted that the models use a proxy variable for capturing the resources for policy analysis and formulation in public health that are available to the executive branch of government (see page 105). More valid measures of the underlying concept might yield different results.
- The analyses carried out in Chapters 8.2 and 8.3 do not disclose any systematic differences between low- and high-cost innovative policies in terms of the difference that the balance of state revenues and spending makes for the likelihood of policy adoption. In other words, there is no evidence of the fiscal situation of the state affecting the likelihood of adoption of innovations that entail high implementation costs, but not of policies with low or invisible costs (***H 2.3***).

According to the findings from Chapters 8.2 and 8.3 alike, previous policy choices by peer governments affect the adoption of complex and high-cost innovative policies, but not of simple and low-cost ones (***H 3.1 and H 3.2 combined***). Hence, as regards the ***Policy Characteristics and Diffusion Effects Hypothesis***, we may conclude that governments pay attention to decision making by relevant peers whenever they seek to limit the risks associated with innovating, but otherwise do not rely on such cues. Whether the risks that innovations involve arise from the complexity of policy designs and/or the costs of policy implementation, cannot yet be inferred from the analyses.

9 Policy Design, Innovation and Diffusion: Conclusion

This study set out to explore an issue that had been largely ignored in policy innovation research: the difference that the characteristics of innovative policies make. In doing so, it focussed on attributes that emanate from the basic design of the policy – its designated beneficiaries, degree of intervention, complexity and implementation costs (see Chapter 3). So, ***do policy design characteristics matter***? The following sections summarise the pertinent findings[202] as well as the achievements and limitations of this study and outline avenues for further research.

Evidence on the relevance of policy design characteristics

Due to empirical constraints arising from the small number of policies analysed and their similarities in design, this study could not fully elicit the role that policy design characteristics play in innovation choices. Nevertheless, its results suggest that they matter in at least in one respect: Policy design characteristics apparently moderate the weight that interdependent decision making among peer governments holds for innovation decisions. Concretely, the analyses show that the Swiss cantons are more likely to adopt complex and high-cost innovative policies in the area of public health when other governments that belong to the same regional conference of cantonal ministers of public health have done so before. In contrast, adoptions of simple and low-cost policies are unaffected by such regional diffusion effects, being driven exclusively by internal determinants (and point-source diffusion) instead. Thus, governments apparently pay attention to other states' previous policy choices when they seek to minimise the risks associated with innovations that pose high resource requirements, but not otherwise. Whether the perceived risks of such innovations arise from the complexity of policy designs and/or the level of implementation costs still has to be established. In short, the study attests to the significance of design characteristics in the sense of the ***Policy Characteristics and Diffusion Hypothesis***.

Moreover, it yields some evidence in favour of the ***Policy Characteristics and Adoption Hypothesis***, suggesting that design characteristics shape the probability of states adopting an innovative policy at all: For "designated beneficiaries" and "policy type", i.e. the combination of degree of intervention, complexity of policy design and implementation costs, exhibit statistically significant effects on the likelihood that the Swiss cantons adopt the six public health policies studied. However, the research design neither allows to disentangle the individual effects of degree of intervention, complexity and costs (due to multicollinearity) nor to ascertain the direct impact of designated beneficiaries with a sufficient degree of certainty (due to the inability to completely control for unobserved heterogeneity among policies). Hence, for the time being, we cannot conclude with sufficient certainty that policy design characteristics matter for the likelihood of innovation.

The study marshals no evidence as to design characteristics affecting the importance of internal determinants for the likelihood of policy adoption – i.e. that degree of intervention shapes the importance of ideological preferences, that complexity moderates the impact of policy-making capacity, and that the impact of state fiscal situation is contingent on implementations costs. The small sample size, the use of a proxy variable for policy-making capacity and the rather blunt measurement of implementation costs might conceal existing effects. While the results do not unequivocally refute the ***Policy Characteristics and Internal Determinants Hypothesis***, they certainly do not lend support to it.

[202] This study also provides insights into the factors that drive the adoption of individual public health policies by the Swiss cantons. The relevant findings are summarised in Chapter 7.5.

In all, it seems justified to state that policy design characteristics matter for innovation choices and constitute a category of explanatory factors in their own right. Further research is required to convey more comprehensive insights on the difference that design characteristics make, though.

Contributions and limitations

This study addresses the core questions of policy innovation research, i.e. whether and when states adopt innovative policies. In doing so, it highlights an issue that has thus far received little attention, but is of substantial interest to diffusion scholars: Do policies matter? The theoretical framework that it develops in response to this question links policy characteristics to three issues of key interest to scholars – the likelihood of innovation as well as the relevance of specific state characteristics and of interdependent decision making among peer governments for innovation decisions. To the author's knowledge, ***it is the first endeavour to address these aspects simultaneously***.

Previous works on the impact of policy characteristics on innovation and diffusion (e.g. Mooney/Lee 1995; Nicholson-Crotty 2009; Boushey 2010) mostly focus on characteristics of the issue that an innovative policy addresses, such as salience, complexity or fragility. In contrast, this study explores what difference attributes that pertain to the solution that an innovative policy entails make. In doing so, it joins the strands of research on policy diffusion and design for the time ever. This ***innovative research agenda*** promises important theoretical insights as aspects related to design elements of innovative policies are likely to matter to policy makers when deciding about the adoption of such policies. What is more, from the point of view of practitioners, findings on the effects of design characteristics could be particularly relevant. Since such characteristics are amenable to change, an understanding of their impact on innovation decisions allows for the purposive crafting of innovative policies by pioneering governments or diffusion agencies in a way that increases their chances of diffusion. By comparison, the manipulation of policy issue characteristics poses much higher demands on political actors who sponsor a particular policy innovation.

It contributes an important finding to this research agenda: Policy innovations that combine complex designs and high implementation costs spread differently from simple and low-cost innovations. In the case of the former, previous adoptions by peer governments encourage other states to follow suit. In contrast, when the policy at stake is simple and inexpensive, previous adoptions do not shape the innovation decisions of potential adopters. As a consequence, we may conclude that the endeavour to minimise technical and/or financial risks drives interdependent decision making on policy innovations. Based on somewhat different operational definitions of complexity, two former studies looked at how the latter affects the weight of diffusion effects: In Brooks' (2007) study, the contingency of peer effects does not apply generally, but is limited to a subset of the countries studied (i.e. lower-income as well as Latin American and Eastern European countries; see page 21). In Makse and Volden's (2011) study, the effects of neighbour-based diffusion are the same for low and high complexity policies.

In addition to the conceptual work and empirical insights on the effects of policy design characteristics, this study ***introduces several novel aspects to policy innovation research***, including the handling of fuzzy transitions between the stages of policy formulation, adoption and implementation arising from pilot testing and time-limited policies, the inclusion of policies with very few adopters into the analysis through multiple events models, and complementing the analysis of top-down diffusion with a new factor, i.e. the provision of technical assistance.

Regarding the policy field studied, this study offers a ***comprehensive description of public health policy making in Switzerland*** and detailed evidence on the diffusion of four individual policies.

As mentioned before, the limitations of this study arise from its empirical basis. Because of difficulties encountered in identifying suitable cantonal policies, the resultant sample comprised too few policies. As a result, some sub-hypotheses of interest could not be tested at all. When testing the remaining sub-hypotheses, the small sample size disallowed to completely control for other differences among

policies than those captured through the policy characteristics variables. What is more, the small number of policies also compromises the statistical power of tests, implying that existing effects might not be detected.

In sum, while this study laid the foundation for a potentially very fruitful research agenda, it could not pursue this agenda in full. In the following section, a number of ideas on how to advance on this agenda are presented.

Avenues for further research

In view of the empirical limitations of this study, the most evident avenue for further research is to replicate the analyses on the basis of a sample that comprises a larger number of policies and provides for sufficient variation on the policy design attributes of interest. A larger sample would also allow for a more nuanced measurement of degree of intervention, complexity and implementation costs than the dichotomous classifications used in this study and thus increase theoretical leverage (see footnotes 55, 56 and 59).

For such a replication, it seems advisable to focus on a more confined policy subfield than public health, either within public health or another issue area. Such an approach is likely to facilitate not only the identification of appropriate policies, but also model specification. For certain internal determinants, e.g. problem severity or producer pressures, are the more easily defined in a comparative way across policies, the smaller the policy subfield analysed. Besides the considerations detailed in Chapter 4.2, the availability of data on internal determinants that are relevant from a theoretical point of view (such as policy-making capacity) should govern the choice of the issue area to be studied.

Replicating the analyses in such a way would allow for a sound empirical test of all sub-hypotheses of interest, including those related to the Policy Characteristics and Adoption Hypothesis. It would also allow for separate tests of the sub-hypotheses that form part of the Policy Characteristics and Diffusion Effects Hypothesis, thus revealing if complex designs and/or high implementation costs motivate interdependent decision making on policy innovations.

Other promising avenues for future research are exploring the impact of policy design characteristics on the substance of innovation decisions (see footnote 39), on the diffusion mechanisms at work (cf. the remarks on the “black-box-approach” adopted in this study on page 64) and on point-source diffusion (see Chapter 4.3). Hence, future studies might want to address the following research questions:

- Depending on the specific set of characteristics that the original policy entails, are states more or less likely to reinvent the policy, to retain the idea, but to devise a different policy design (“principle diffusion”), or to introduce the policy on a trial basis first (pilot testing)?
- Do policy characteristics condition what type or types of diffusion mechanisms are at work?
- Do policy characteristics trigger certain types of point-source diffusion?

To the author’s knowledge, none of these issues has been systematically investigated into thus far.

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11 Appendix

Table 49: Cantonal health acts (as of December 2015)

Canton	*Cantonal health act*
AG	Gesundheitsgesetz vom 20. Januar 2009 (Stand 1. Juli 2015) (GesG; SAR 301.100)
AI	Gesundheitsgesetz vom 26. April 1998 (GS 800.000)
AR	Gesundheitsgesetz vom 25. November 2007 (Stand 1. Januar 2015) (bGS 811.1)
BE	Gesundheitsgesetz vom 2. Dezember 1984 (GesG; BSG 811.01)
BL	Gesundheitsgesetz vom 21. Februar 2008 (Stand 1. Januar 2015) (GesG; SGS 901)
BS	Gesundheitsgesetz vom 21. September 2011 (Stand 10. Mai 2015) (GesG; SG 300.100)
FR	Gesundheitsgesetz vom 16. November 1999 (GesG; SGF 821.0.1)
GE	Loi sur la santé du 7 avril 2006 (LS; RSG K 1 03)
GL	Gesetz über das Gesundheitswesen vom 6. Mai 2007 (Stand 1. Juli 2014) (Gesundheitsgesetz; GS VIII A/1/1)
GR	Gesetz über das Gesundheitswesen des Kantons Graubünden vom 2. Dezember 1984 (Stand 1. Januar 2013) (Gesundheitsgesetz; BR 500.000)
JU	Loi sanitaire du 14 décembre 1990 (RSJU 810.01)
LU	Gesundheitsgesetz vom 13. September 2005 (Stand 1. Juli 2014) (SRL 800)
NE	Loi de santé du 6 février 1995 (Etat au 1er janvier 2015) (LS; RSN 800.1)
NW	Gesetz zur Erhaltung und Förderung der Gesundheit vom 30. Mai 2007 (Gesundheitsgesetz, GesG; NG 711.1)
OW	Gesundheitsgesetz vom 20. Oktober 1991 (Stand 1. Januar 2011) (GDB 810.1)
SG	Gesundheitsgesetz vom 28. Juni 1979 (Stand 1. Januar 2014) (GesG; sGS 311.1)
SH	Gesundheitsgesetz vom 21. Mai 2012 (GesG; SHR 810.100)
SO	Gesundheitsgesetz vom 27. Januar 1999 (Stand 1. Januar 2014) (BGS 811.11)
SZ	Gesundheitsgesetz vom 16. Oktober 2002 (GesG; SRSZ 571.110)
TG	Gesetz über das Gesundheitswesen vom 5. Juni 1985 (Stand 1. September 2015) (Gesundheitsgesetz, GG; RB 810.1)
TI	Legge sulla promozione della salute e il coordinamento sanitario del 18 aprile 1989 (Legge sanitaria; RL 6.1.1.1)
UR	Gesundheitsgesetz vom 1. Juni 2008 (Stand am 1. Januar 2013) (GG; RB 30.2111)
VD	Loi sur la santé publique du 29 mai 1985 (Etat au 01.09.2015) (LSP; RSV 800.01)
VS	Gesundheitsgesetz vom 14. Februar 2008 (SGS 800.1)
ZG	Gesetz über das Gesundheitswesen im Kanton Zug vom 30. Oktober 2008 (Stand 1. Oktober 2013) (Gesundheitsgesetz, GesG; BGS 821.1)
ZH	Gesundheitsgesetz vom 2. April 2007 (GesG; LS 810.1)

Sources: LexFind (Schweizerische Staatsschreiberkonferenz 2016), cantonal websites.

Table 50: Ban on tobacco billboard advertising: cantonal legal basis and dates of adoption and of entry into force, 2000-2015

Canton	*Statutory basis*	*Date of adoption*	*Date of entry into force*
AR	Cantonal health act and corresponding ordinance: ▪ Art. 16 Abs. 2 Gesundheitsgesetz vom 25. November 2007 (Stand 1. Januar 2015) (bGS 811.1) ▪ Art. 16 Abs. 1 Verordnung zum Gesundheitsgesetz vom 11. Dezember 2007 (Stand 24. April 2015) (bGS 811.11)	25.11.2007	01.01.2008
BE	Cantonal trade and commerce act and corresponding ordinance: ▪ Art. 15 Abs. 1, 3 Gesetz über Handel und Gewerbe vom 4. November 1992 (HGG; BSG 930.1) ▪ Art. 6, 8 Verordnung über Handel und Gewerbe vom 24. Januar 2007 (HGV; BSG 930.11)	12.06.2006	01.01.2007
BL	Cantonal alcohol and tobacco act: ▪ § 3 Kantonales Alkohol- und Tabakgesetz vom 22. Juni 2006 (Stand 1. Januar 2013) (KaATG; SGS 905)	24.09.2006[203]	01.01.2007
BS	Cantonal penal law and billboard advertising ordinance: ▪ § 22a) Übertretungsstrafgesetz vom 15. Juni 1978 (Stand 28. Dezember 2014) (SG 253.100) ▪ § 7d) Plakatverordnung vom 7. Februar 1933 (Stand 6. Februar 2011) (SG 569.500)	10.11.2004	01.07.2005
FR[204]	-	-	-
GE	Cantonal advertising act and corresponding ordinance: ▪ Art. 9, alinéa 2 Loi sur les procédés de réclame du 9 juin 2000 (LPR; RSG F 3 20) ▪ Art. 1 Règlement d'application de la loi sur les procédés de réclame du 11 octobre 2000 (RPR; RSG F 3 20.01)	09.06.2000	20.10.2000
GR	Cantonal health act and corresponding ordinance: ▪ Art. 15 Abs. 1, 3 Gesetz über das Gesundheitswesen des Kantons Graubünden vom 2. Dezember 1984 (Stand 1. Januar 2013) (Gesundheitsgesetz; BR 500.000) ▪ Art. 3 Verordnung zum Gesundheitsgesetz vom 16. Dezember 2008 (Stand 1. Januar 2014) (BR 500.010)	19.10.2005	01.07.2006
OW	Cantonal health act: ▪ Art. 70 Abs. 1 Gesundheitsgesetz vom 3. Dezember 2015 (Stand 1. Februar 2016) (GDB 810.1)	03.12.2015	01.02.2016
SG	Cantonal health act: ▪ Art. 52bis Gesundheitsgesetz vom 28. Juni 1979 (Stand 1. Januar 2014) (GesG; sGS 311.1)	01.08.2006	01.10.2006
SO	Cantonal health act: ▪ § 6bis Abs. 3 Gesundheitsgesetz vom 27. Januar 1999 (Stand 1. Januar 2014) (BGS 811.11)	26.11.2006	01.07.2007
TG	Cantonal act on tobacco and alcohol billboard advertising and on tobacco sales to minors: ▪ § 1 Gesetz über das Verbot der Plakatwerbung für Tabak und Alkohol sowie über den Jugendschutz beim Verkauf von Tabakwaren vom 21. Juni 2006 (Stand 1. Januar 2007) (RB 812.4)	21.06.2006	01.01.2007

[203] The cantonal parliament of BL passed the relevant act in June 2006, while the people approved of it in a referendum held in September 2006. Since "date of adoption" reflects the date when the policy was finally decided upon, the date provided in this column is not identical to the date designated by the title of the act.
[204] FR has not adopted advertising restrictions that pertain to the public space in general. It prohibits tobacco and alcohol advertising in educational and health facilities and their direct surroundings, though.

Table 50: Ban on tobacco billboard advertising: cantonal legal basis and the dates of adoption and of entry into force, 2000-2015 (continued)

Canton	*Statutory basis*	*Date of adoption*	*Date of entry into force*
TI	Cantonal advertising act and corresponding ordinance: ▪ Art. 4 alinea 2 Legge sugli impianti pubblicitari del 26 febbraio 2007 (RL 7.4.2.5) ▪ Art. 1 Regolamento d'esecuzione della Legge sugli impianti pubblicitari del 24 settembre 2008 (RL 7.4.2.5.1)	17.02.2009	01.05.2009
UR	Cantonal health act: ▪ Art. 17 Abs. 2a) Gesundheitsgesetz vom 1. Juni 2008 (Stand am 1. Januar 2013) (GG; RB 30.2111)	27.06.2008[205]	01.09.2009
VD	Cantonal advertising act and corresponding ordinance: ▪ Art. 5a Loi sur les procédés de réclame du 6 décembre 1988 (Etat au 01.06.2013) (LPR; RSV 943.11) ▪ Art. 2 Règlement d'application de la loi du 6 décembre 1988 sur les procédés de réclame du 31 janvier 1990 (Etat au 01.07.2007) (RLPR; RSV 943.11.1)	13.12.2006	01.07.2007
VS	Cantonal health act and ordinance on second-hand smoke and the tobacco advertising ban: ▪ Art. 111 Gesundheitsgesetz vom 14. Februar 2008 (SGS 800.1) ▪ Art. 11-13 Verordnung über den Schutz der Bevölkerung vor Passivrauchen und das Tabakwerbeverbot vom 1. April 2009 (SGS 818.120)	14.02.2008	01.07.2009
ZG	Cantonal health act: ▪ § 49 Gesetz über das Gesundheitswesen im Kanton Zug vom 30. Oktober 2008 (Stand 1. Januar 2013) (Gesundheitsgesetz, GesG; BGS 821.1)	30.10.2008	01.03.2009
ZH	Cantonal health act and ordinance on misuse of psychoactive substances: ▪ § 48 Abs. 2 Gesundheitsgesetz vom 2. April 2007 (GesG; LS 810.1) ▪ § 1 Verordnung über die Bekämpfung des Suchtmittelmissbrauchs vom 21. Mai 2008 (LS 818.25)	02.04.2007	01.07.2008

Sources: Website of FOPH (BAG 2016a), LexFind (Schweizerische Staatsschreiberkonferenz 2016), cantonal websites, e-mail correspondence with cantonal authorities.

[205] The act was adopted in a referendum held on 27 June 2008.

Table 51: Ban on tobacco billboard advertising: related legislative activities at the federal level, 1990-2015

Popular initiatives	
1992-1993	92.031 Popular initiative entitled "Volksinitiative zur Verminderung der Tabakprobleme"[206] [popular initiative on the mitigation of tobacco-related problems]; rejected (no-votes: 1°521°885; yes-votes: 521°433). Policy proposed: Comprehensive ban on tobacco advertising. Indirect counterproposal by FC; not pursued. Policy proposed: Ban on tobacco advertising on billboards and in cinemas.
Parliamentary initiatives, motions and postulates	
1998	98.3351 Motion NC entitled "Bekämpfung des Tabakkonsums" [abatement of tobacco consumption], submitted by Christian Grobet (GE); motion made into a postulate at the request of the FC; status: accepted. Policy proposed: Ban on tobacco advertising in the public space.
2000	00.432 Parliamentary initiative NC entitled "Tabak. Bekämpfung der tödlichen Folgen" [abatement of the lethal consequences of tobacco], submitted by Christian Grobet (GE); not pursued; status: terminated. Policy proposed: Comprehensive ban on tobacco advertising.
2000	00.3435 Motion NC entitled "Verbot der Tabakwerbung" [ban on tobacco advertising], submitted by Pierre Tillmanns (VD); motion made into a postulate at the request of the FC; status: accepted. Policy proposed: Comprehensive ban on tobacco advertising.
2002	02.466 Parliamentary initiative NC entitled "Verbot der Tabakwerbung" [ban on tobacco advertising], submitted by Christian Grobet (GE); not pursued; status: terminated. Policy proposed: Ban on tobacco advertising on public ground and in all areas visible from public ground, in places accessible to the public (such as public transport facilities, sports and cultural venues), in publications that target the public; ban on sponsoring of sports, cultural and entertainment events.
2003	02.3784 Motion NC entitled "Verbot von Tabakwerbung auch in der Schweiz" [ban on tobacco advertising also in Switzerland], submitted by Ursula Wyss (BE); not pursued; status: terminated. Policy proposed: Ban on tobacco advertising in print media, on billboards and in cinemas.
2006	06.420 Parliamentary initiative NC entitled "Verbot der Tabakwerbung und des Verkaufs von Tabakprodukten an Minderjährige" [ban on tobacco advertising and on tobacco sales to minors], submitted by Marianne Huguenin (VD); not pursued; status: terminated. Policy proposed: Comprehensive ban on tobacco advertising.
2015	15.3548 Motion CS entitled "Frankenstärke. Verzicht auf ungerechtfertigte Werbeverbote im Tabakproduktegesetz" [abandoning unjustified sales bans in the Tobacco Products Act in view of the strong swiss franc], submitted by Hans Hess (OW); withdrawn; status; terminated. Policy proposed: Eliminating the new restrictions on tobacco advertising from the draft legislation on the Tobacco Products Act.

Source: Curia Vista (Bundesversammlung 2016b).

[206] Simultaneously, a second initiative that entailed a ban on alcohol advertising was voted on by the Swiss people and rejected.

Table 52: Ban on tobacco sales to children and adolescents: cantonal legal basis and dates of adoption and of entry into force, 2005-2015[207]

Canton	*Statutory basis*	*Date of adoption*	*Date of entry into force*
AG	Cantonal health act and corresponding ordinance: ▪ § 37 Gesundheitsgesetz vom 20. Januar 2009 (Stand 1. Juli 2015) (GesG; SAR 301.100) ▪ §§ 16-22 Verordnung zum Gesundheitsgesetz vom 11. November 2009 (Stand 1. September 2014) (GesV; SAR 301.111)	20.01.2009	01.01.2010
AR	Cantonal health act: ▪ Art. 16 Abs. 3 Gesundheitsgesetz vom 25. November 2007 (Stand 1. Januar 2015) (bGS 811.1)	25.11.2007	01.01.2008/ 01.01.2009
BE	Cantonal trade and commerce act and corresponding ordinance; cantonal penal law[208]: ▪ Art. 16-18a Gesetz über Handel und Gewerbe vom 4. November 1992 (HGG; BSG 930.1) ▪ Art. 9 Verordnung über Handel und Gewerbe vom 24. Januar 2007 (HGV; BSG 930.11) ▪ Art. 13 Abs. 1 Gesetz über das kantonale Strafrecht vom 9. April 2009 (KStrG; BSG 311.1)	12.06.2006	01.01.2007/ 01.01.2010
BL	Cantonal alcohol and tobacco act: ▪ § 2 Kantonales Alkohol- und Tabakgesetz vom 22. Juni 2006 (Stand 1. Januar 2013) (KaATG; SGS 905)	24.09.2006[209]	01.01.2007/ 31.12.2009
BS	Cantonal penal law: ▪ § 35a) Übertretungsstrafgesetz vom 15. Juni 1978 (Stand 28. Dezember 2014) (SG 253.100)	18.10.2006	01.08.2007/ 31.12.2009
FR	Cantonal trade act: ▪ Art. 31 Gesetz vom 25. September 1997 über die Ausübung des Handels (SGF 940.1)	26.06.2008	01.01.2009
GL	Cantonal trade and commerce act: ▪ Art. 19 Gesetz über die Handels- und Gewerbetätigkeiten vom 5. Mai 2013 (Stand 1. September 2014) (GS IX B/25/1)	05.05.2013	01.01.2014
GR	Cantonal health act: ▪ Art. 15 Abs. 2, 3 Gesetz über das Gesundheitswesen des Kantons Graubünden vom 2. Dezember 1984 (Stand 1. Januar 2013) (Gesundheitsgesetz; BR 500.000)	19.10.2005	01.04.2006/ 01.01.2008
JU	Cantonal health act and ordinance on solaria and tobacco sales: ▪ Art. 6b Loi sanitaire du 14 décembre 1990 (RSJU 810.01) ▪ Art. 6-8 Ordonnance concernant les appareils de bronzage et la vente des produits du tabac du 17 juin 2014 (RSJU 810.015)	26.09.2012	01.01.2013/ 01.09.2014
LU	Cantonal health act: ▪ § 48 Gesundheitsgesetz vom 13. September 2005 (Stand 1. Juli 2014) (SRL 800)	13.09.2005	01.01.2006/ 01.01.2008

[207] In many cantons, a transitional period was to allow operators of tobacco vending machines to implement the required technical adjustments. If the column "date of entry into force" provides two dates, the first one pertains to the minimum age, the second one to the vending machine regulations of the cantonal law.

[208] The cantonal penal law contains a prohibition of providing minors with tobacco. Being adopted in 2009, it complements the ban on tobacco sales to minors.

[209] The act was adopted in a referendum held on 9 September 2004.

Table 52: Ban on tobacco sales to children and adolescents: cantonal legal basis and dates of adoption and of entry into force, 2005-2015 (continued)

Canton	*Statutory basis*	*Date of adoption*	*Date of entry into force*
OW	Cantonal health act: ▪ Art. 68 Gesundheitsgesetz vom 3. Dezember 2015 (Stand 1. Februar 2016) (GDB 810.1)	03.12.2015	01.02.2016/ 31.01.2017
NE	Cantonal commercial inspectorate act and corresponding ordinance: ▪ Art. 25 Loi sur la police du commerce du 18 février 2014 (Etat au 1er janvier 2015) (LPCom; RSN 941.01) ▪ Art. 54-56 Règlement d'exécution des lois sur la police du commerce et sur les établissements publics du 17 décembre 2014 (Etat au 1er mai 2015) (RELPComEP; RSN 941.010)	18.02.2014	01.01.2015/ 01.01.2016
NW	Cantonal health act: ▪ Art. 72 Gesetz zur Erhaltung und Förderung der Gesundheit vom 30. Mai 2007 (Gesundheitsgesetz, GesG; NG 711.1)	28.09.2008[210]	01.03.2009
SG	Cantonal health act: ▪ Art. 52ter Gesundheitsgesetz vom 28. Juni 1979 (Stand 1. Januar 2014) (GesG; sGS 311.1)	01.08.2006	01.10.2006/ 01.10.2008
SH	Cantonal health act: ▪ Art. 31 Abs. 1-2 Gesundheitsgesetz vom 21. Mai 2012 (GesG; SHR 810.100)	21.05.2012	01.01.2013/ 01.01.2014
SO	Cantonal health act: ▪ § 6bis Abs. 1-2 Gesundheitsgesetz vom 27. Januar 1999 (Stand 1. Januar 2014) (BGS 811.11)	26.11.2006	01.01.2007/ 01.01.2009
TG	Cantonal act on tobacco and alcohol billboard advertising and on tobacco sales to minors: ▪ § 2 Gesetz über das Verbot der Plakatwerbung für Tabak und Alkohol sowie über den Jugendschutz beim Verkauf von Tabakwaren vom 21. Juni 2006 (Stand 1. Januar 2007) (RB 812.4)	21.06.2006	01.01.2007/ 31.12.2009
TI	Cantonal ordinance on protection from smoking: ▪ Art. 5-6 Regolamento concernente la protezione contro il fumo del 24 aprile 2013 (RL 6.1.1.1.8)	24.03.2013	01.09.2013/ 01.06.2014
UR	Cantonal health act: ▪ Art. 17 Abs. 2b)-c) Gesundheitsgesetz vom 1. Juni 2008 (Stand am 1. Januar 2013) (GG; RB 30.2111)	01.06.2008	01.09.2009
VD	Cantonal act on economic activities: ▪ Art. 66h-i, 98a-c Loi sur l'exercice des activités économiques du 31 mai 2005 (Etat au 01.11.2014) (LEAE; RSV 930.01)	31.05.2005	01.01.2006/ 01.01.2008
VS	Cantonal commercial inspectorate act and corresponding ordinance: ▪ Art. 4 Abs. 5, Art. 10 Abs. 2 Gesetz über die Gewerbepolizei vom 8. Februar 2007 (SGS 930.1) ▪ Art. 2 Verordnung betreffend das Gesetz über die Gewerbepolizei vom 16. August 2007 (SGS 930.100)	08.02.2007	01.01.2008/ 01.07.2008
ZG	Cantonal health act: ▪ § 50 Gesetz über das Gesundheitswesen im Kanton Zug vom 30. Oktober 2008 (Stand 1. Januar 2013) (Gesundheitsgesetz, GesG; BGS 821.1)	30.10.2008	01.03.2010

[210] The act was adopted in an obligatory referendum on 28 September 2009.

Table 52: Ban on tobacco sales to children and adolescents: cantonal legal basis and dates of adoption and of entry into force, 2005-2015 (continued)

Canton	*Statutory basis*	*Date of adoption*	*Date of entry into force*
ZH	Cantonal health act and ordinance on misuse of psychoactive substances: ▪ § 48 Abs. 5 Gesundheitsgesetz vom 2. April 2007 (GesG; LS 810.1) ▪ § 4 Verordnung über die Bekämpfung des Suchtmittelmissbrauchs vom 21. Mai 2008 (LS 818.25)	02.04.2007	01.07.2008/ 01.07.2009

Sources: Website of FOPH (BAG 2016a), LexFind (Schweizerische Staatsschreiberkonferenz 2016), cantonal websites, e-mail correspondence with cantonal authorities.

Table 53: Ban on tobacco sales to children and adolescents: related legislative activities at the federal level, 1990-2015

Parliamentary initiatives, motions and postulates	
1996	96.3493 Postulate NC entitled "Verbot des Verkaufs von Tabakwaren an Jugendliche unter 16 Jahren" [ban on tobacco sales to young people aged less than 16 years], submitted by Otto Zwygart (BE); status: accepted. Policy proposed: Ban on tobacco sales to adolescents aged less than 16 years.
2000	00.432 Parliamentary initiative NC entitled "Tabak. Bekämpfung der tödlichen Folgen" [abatement of the lethal consequences of tobacco], submitted by Christian Grobet (GE); not pursued; status: terminated. Policy proposed: Ban on tobacco sales to adolescents aged less than 16 years.
2005	05.3618 Motion CS entitled "Koordination der kantonalen Tabakpräventionsmassnahmen" [coordination of cantonal tobacco prevention measures], submitted by Hans Hess; rejected; status: terminated. Policy proposed: Standardisation of cantonal minimum age provisions for tobacco purchases.
2006	06.420 Parliamentary initiative NC entitled "Verbot der Tabakwerbung und des Verkaufs von Tabakprodukten an Minderjährige" [ban on tobacco advertising and on tobacco sales to minors], submitted by Marianne Huguenin (VD); not pursued; status: terminated. Policy proposed: Ban on tobacco sales to minors.
2006	06.3845 Motion NC entitled "Schutz der Jugendlichen gegen Tabak" [protection of young people against tobacco], submitted by Maurice Chevrier (VS); withdrawn; status: terminated. Policy proposed: Ban on tobacco sales to minors.
2011	11.3637 Motion NC entitled "Gesamtschweizerisch einheitliches Abgabealter für Tabakprodukte" [Swiss-wide uniform minimum age for purchasing tobacco products], submitted by Ruth Humbel (AG); status: accepted. Policy proposed: Stipulation of a minimum age for purchasing tobacco products.

Source: Curia Vista (Bundesversammlung 2016b).

Table 54: Restrictions on alcohol sales at petrol stations: cantonal legal basis and dates of adoption and of entry into force, 1998-2015

Canton	*Statutory basis*	*Date of adoption*	*Date of entry into force*
BL	Cantonal hotel and restaurant industry act: ▪ § 18 Abs. 4 Gastgewerbegesetz vom 5. Juni 2003 (Stand 1. Januar 2015) (SGS 540)	30.11.2003	01.01.2004
FR	Cantonal trade act: ▪ Art. 7b Abs. 3 Gesetz vom 25. September 1997 über die Ausübung des Handels (HAG; SGF 940.1)	14.10.2004	01.07.2005
GE	Cantonal act on the cash purchase of alcoholic beverages: ▪ Art. 4 alinéa 1 Loi sur la vente à l'emporter des boissons alcooliques du 22 janvier 2004 (LVEBA; RSG I 2 24)	26.09.2004	01.01.2005
JU	Cantonal act on hotel and restaurant industry and on trade in alcoholic beverages and corresponding ordinance: ▪ Art. 6 Loi sur l'hôtellerie, la restauration et le commerce de boissons alcooliques du 18 mars 1998 (Loi sur les auberges; RSJU 935.11) ▪ Art. 6 Ordonnance sur l'hôtellerie, la restauration et le commerce de boissons alcooliques du 30 juin 1998 (Ordonnance sur les auberges; RSJU 935.111)	18.03.1998	01.07.1998
VD	Cantonal act on inns and alcohol sales: ▪ Art. 5 Loi sur les auberges et les débits de boissons du 26 mars 2002 (Etat au 01.01.2007) (LADB; RSV 935.31)	26.03.2002	01.01.2003

Sources: Website of FOPH (BAG 2016b), LexFind (Schweizerische Staatsschreiberkonferenz 2016), cantonal websites.

Table 55: Ban on takeout alcohol sales at night: cantonal legal basis and dates of adoption and of entry into force, 2004-2015

Canton	*Statutory basis*	*Date of adoption*	*Date of entry into force*
GE	Cantonal act on takeout sales of alcoholic beverages: ▪ Art. 11 Loi sur la vente à l'emporter des boissons alcooliques du 22 janvier 2004 (LVEBA; RSG I 2 24)	26.09.2004	01.01.2005

Sources: Website of FOPH (BAG 2016b), LexFind (Schweizerische Staatsschreiberkonferenz 2016), cantonal websites.

Table 56: Breast cancer screening programmes: timing of adoption, type of adoption decision and onset of implementation, 1993-2015

Canton	*Year of adoption*	*Description of adoption decision*	*Year screenings started*
BE	2008	Authorisation of pilot project (Jura bernois) [appropriation of funds for canton-wide project in 2011]	2009
BS	2013	Appropriation of programme funds	2014
FR	2002	Appropriation of programme funds	2004
GE	1998	Authorisation of programme	1999
GR	2009	Adoption of statutory basis	2011
JU	2001	Appropriation of programme funds	2005
NE	2006	Authorisation of programme	2007
SG	2008	Adoption of statutory basis	2010
TG	2009	Authorisation of programme	2011
TI	2013	Authorisation of programme	2015
VD	1993	Authorisation of pilot project [appropriation of funds for canton-wide project in 1998]	1993
VS	1998	Authorisation of programme	1999

Sources: Website of swiss cancer screening (2015a), cantonal websites, LexFind (Schweizerische Staatsschreiberkonferenz 2016).

Table 57: Restaurant food nutrition labelling: timing of adoption, type of adoption decision and onset of implementation, 1993-2014

Canton	*Year of adoption*	*Description of adoption decision*	*Year first label(s) awarded*
AG	2011	Policy adoption during cantonal action programme	2012
BE	2007	Authorisation of pilot project (Jura bernois) [authorisation of canton-wide policy in 2008]	2008
BL	2007	Authorisation of pilot project [adoption of cantonal action programme in 2008]	2008
BS	2011	Adoption of cantonal action programme	2013
FR	2001	Appropriation of funding	2001
GE	1993	Design and development of label	1994
GR	2011	Adoption of cantonal action programme	2014
JU	2002	Adoption of cantonal programme on sustainable development	2004
LU	2009	Policy adoption during cantonal action programme	2011
NE	2001	Appropriation of funding	2001
SG	2011	Adoption of cantonal action programme	2013
SO	2008	Adoption of cantonal action programme	2011
TG	2008	Adoption of cantonal action programme	2011
TI	1996	Design and development of label	1997
UR	2011	Adoption of cantonal action programme	2013
VD	1997	Design and development of label	1998
VS	2003	Appropriation of funding	2003
ZG	2011	Adoption of cantonal action programme	2013

Legend: Cantons highlighted in grey have adopted s&d; cantons in white have adopted FV.
Sources: Fourchette verte Suisse (FV-CH 2003-2015), Radix (2015c), cantonal websites, e-mail correspondence with cantonal representatives.

Table 58: Standardised logit models on the adoption of four individual public health policies

		(5a) Ban on tobacco billboard advertising	(5b) Ban on tobacco sales to minors	(5c) Breast cancer screening programmes	(5d) Restaurant food nutrition labelling
Regional diffusion	Regional diffusion 2 (implementers) (t-1)	-2.330 (2.632)	-1.209 (2.671)	3.332** (1.035)	6.755*** (1.164)
Point-source diffusion	Financial incentives	-	-	9.467# (5.338)	2.851* (1.259)
Ideological preferences	Strength of left parties in parliament	6.388# (3.838)	5.749# (3.440)	-2.712 (3.947)	-1.953 (3.718)
Interest group pressures	Strength of public health organisations (t-1)	11.00*** (3.143)	1.045 (1.130)	1.054 (1.379)	1.889# (0.992)
Policy-making capacity	Density of administration (t-1)	0.254** (0.088)	-0.078 (0.061)	-0.133* (0.059)	0.031 (0.052)
State interventionism	Size of public sector (t-1)	0.046 (0.072)	0.048 (0.110)	0.676*** (0.134)	0.219 (0.156)
State fiscal situation	Relative budget surplus/deficit (t-1)	-0.190* (0.092)	-0.004 (0.053)	0.145** (0.046)	-0.030 (0.045)
Producer pressures	Tobacco production (t-1)	-8.120*** (2.066)	-0.141# (0.081)	-	-
	Radiology industry (t-1)	-	-	42.02** (13.02)	-
	Restaurant sector (t-1)	-	-	-	-0.055 (0.047)
Controls	t	-7.508** (2.330)	1.708* (0.821)	-3.161# (1.815)	-0.342 (0.498)
	t^2	2.605** (0.802)	-0.553* (0.234)	0.214 (0.154)	0.018 (0.057)
	t^3	-0.185** (0.059)	0.047* (0.020)	-0.004 (0.004)	-0.000 (0.002)
	Constant	--19.00** (6.243)	-3.362# (1.970)	-12.13*** (2.219)	-5.342# (2.860)
	N	261	124	448	410
	Years	14	9	21	21
	Wald Chi2	34.70***	11.77	56.56***	152.6***
	McFadden's R2	0.607	0.115	0.377	0.287
	AIC	67.09	121.8	92.82	129.4

Legend: Robust standard errors in parentheses, clustered by canton; # p < 0.1, * *p* < 0.05, ** *p* < 0.01, *** *p* < 0.001.